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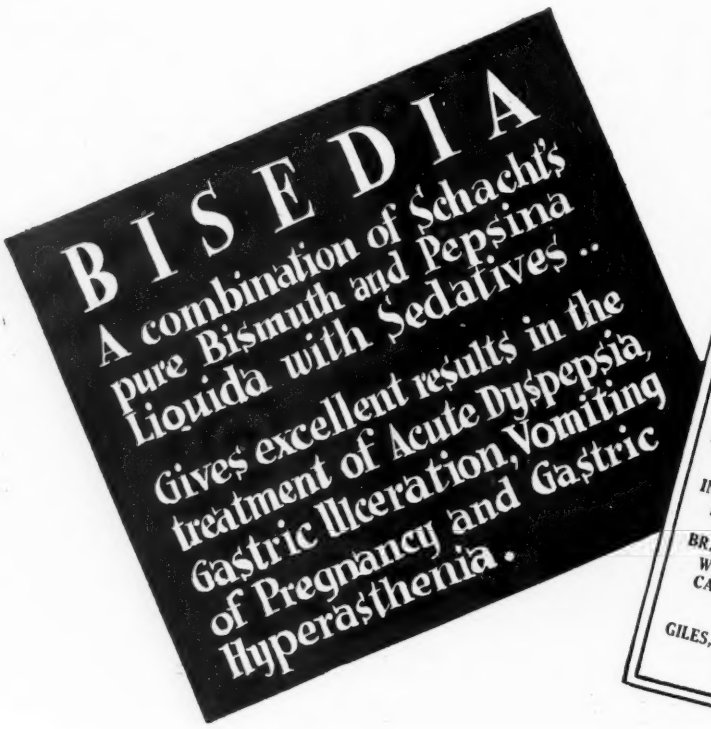
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CVS-49

Remarks
ON
ACUTE INTESTINAL OBSTRUCTION*

BY

SIR HENRY S. NEWLAND, C.B.E., D.S.O.
M.S., F.R.C.S.

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"In the same hour came forth the fingers of a man's hand and wrote over against the candlestick upon the plaister of the wall of the King's Palace. . . . Then the King's countenance was changed and his thoughts troubled him. . . . Then came in all the King's wise men, but they could not read the writing, nor make known to the King the interpretation thereof."

The fingers and the graph on the wall, the handiwork of one of the secretaries (Mr. Vick) of this Section, speak for themselves, and surely should give surgeons seriously to think. The interpretation of them is not difficult. He who runs may read that delay in helping the patient too often dooms him to death. In the early recognition and treatment of acute intestinal obstruction the responsible medical attendant has been weighed in the balance and found wanting. It is all very well for surgeons with one accord to excuse themselves and to assert that the responsibility for that death-dealing delay is not theirs. The fact remains that acute intestinal obstruction is a surgical condition. It is to the surgeons attached to the medical schools throughout the Empire that the profession looks for light and leading. It is they who have the "light, understanding, and excellent wisdom" which should qualify them to dissolve doubts and to diminish the peril of delay. All surgeons are agreed that delay in recognizing the presence of acute intestinal obstruction is the chief factor in determining the death of the patient. The period during which operation is likely to be followed by success is the phase which extends from the sudden action of the obstructing agent to the first appearance of distension of the abdomen. It is difficult to conceive how any future research or discovery can expedite a correct diagnosis in the early hours of this condition. We must use the means at hand and cultivate the "seeing eye" to detect and appraise the value of the signs, positive and negative, sparse though they may be, in the phase mentioned. Something akin to the super-sense of the Australian aborigine would be a priceless possession. Tracks in the bush, obvious to him, are unseen by the white man, yet are visible when shown.

I do not employ this simile to magnify the difficulties of the problem, but to point the moral that the early signs of acute intestinal obstruction are present if they are looked for with a "seeing eye." Too often, when death has occurred, we are wise after the event, and realize we have failed in the surgical application of the injunction "he that hath eyes to see let him see."

It is unfortunate that the acute symptoms that announce the onset of acute intestinal obstruction should be common to other acute abdominal conditions, but their very intensity should focus our attention on their possible cause. Sudden onset of intense and persistent pain, soon followed by repeated vomiting, and associated with collapse and absolute constipation, constitute a clinical picture of acute obstruction of the intestine that should not be mistaken for anything else. The very absence of the abdominal signs of visceral inflammation or injury, or of a peritoneal insult (extravasation), strongly favours the diagnosis.

* Contribution to a discussion in the Section of Surgery at the Centenary Meeting of the British Medical Association, London, 1932.

THE DIAGNOSTIC VALUE OF ENEMATA

In the early phase of a less severe grade of obstruction the prompt detection of absolute constipation is of supreme importance. As was pointed out by Mr. Sampson Handley in the discussion on this subject a few years ago, two enemata at an interval of one hour will give positive evidence of acute complete intestinal obstruction. Even if any doubt attaches to the first, no faeces or flatus will result from the second enema, which may be retained or expelled without force. The bed-pan should always be saved for examination, and the examination carried out. It is important that medical students should receive practical instruction in administration of enemata, and in the inspection of the result. In certain circumstances of medical practice a human life may depend on this knowledge.

Attention has recently been called by Lord Moynihan and others to the dire consequences of giving an aperient at the onset of acute appendiceal obstruction. It is even more strongly contraindicated, if that is possible, at any stage of acute intestinal obstruction. It does nothing but harm. It lashes the bowel into a frenzy of impotent effort and aggravates the pathological processes and the symptoms. Unlike morphine it does not mask symptoms; it magnifies them in a malign manner. It should be a surgical aphorism that an aperient should never be given to a patient at the onset of acute abdominal pain. An enema is just as likely to give relief. It is certain to give some information, negative or positive.

POST-OPERATIVE ADHESIONS

There is another aspect of the question to which I desire to direct attention—the aetiology of acute intestinal obstruction. I cannot give figures, but there is no question that the surgeon himself is responsible for not a few cases. The actual death rate of appendicitis would be appreciably increased were all the cases which die from acute intestinal obstruction supervening soon or more remotely after operation included. In my experience it is not the patient with a gross abscess who later on develops obstruction. Such cases are usually treated with a minimum of manipulation—simply an incision and the introduction of a tube into the abscess cavity. In the appendix cases followed by acute intestinal obstruction that I have seen there has been no abscess formation, but a good deal of difficulty and manipulation has been associated with the removal of the appendix by men of no great experience. I can myself recall a case of intussusception under my care at the Adelaide Children's Hospital over twenty years ago, in which I operated and easily reduced the invagination. The appendix appeared unduly thickened and turgid. In an evil moment I was tempted to remove it, and the child made an uneventful recovery. About two years later the patient was readmitted to the Children's Hospital in the last stage of acute intestinal obstruction. I operated and divided a band which ran from the site of the appendix stump and had strangled a loop of small intestine. The patient died. I have never forgotten this result of my meddlesome surgery. The bands and adhesions which cause acute intestinal obstruction are, in not a few cases, man-made, and may arise after aseptic or doubtfully aseptic operations. Trauma—manual or instrumental—or the use of a drainage tube for too long a period may all play a part in their development.

ACUTE INTUSSUSCEPTION

It is common knowledge that some of the features of acute intestinal obstruction, when taken in conjunction with the history, enable a positive diagnosis of the cause to be made. The presence of a tumour with certain

characters is the best example of this. Of all the forms of acute intestinal obstruction acute intussusception affords the most striking instance of the influence of early operation in diminishing the mortality. The history, the symptoms and signs, and the presence of a tumour which can almost always be found if it be sought for under an anaesthetic, form a very definite clinical picture. Sir William Taylor of Dublin, and Sir Charles Clubbe of Sydney, have long preached the gospel of early operation in acute intussusception, and their pleadings have brought their reward. In one series of a hundred cases operated on by Sir Charles Clubbe the mortality was 3.5 per cent., and in a series of Sir William Taylor's the death rate was less than 4 per cent.

Obstruction by Gall-stones

In rare instances a gall-stone in the small intestine has been felt, but so rarely that help in this respect cannot be looked for. Most assistance is derived from a history of symptoms pointing to disease of the gall-bladder. Consideration of these, and of the clinical features of the case, have enabled me in the last thirteen years to diagnose, with rare good fortune, gall-stone obstruction in three cases of acute stoppage of the bowels. The stones were removed successfully in each case through a muscle-splitting incision in the right iliac region. In a fourth case, seen in consultation, I was able to make a correct diagnosis, and the stone was successfully removed by another surgeon. The operation in one of my cases was performed on the fifth day. I am able to show you the stone I removed. The patient was fortunate to survive, as the records show that when operation is postponed beyond the fourth day the patient almost invariably dies. So far as I can recall I have never been asked to see a case of gall-stone obstruction before the third day. It should be possible to make a correct diagnosis on the second day. A carefully taken history should direct attention to the gall-bladder as the possible origin of the trouble. Indeed, in most of these cases the first diagnosis has been one of gall-stone colic, and morphine has been given. This, however, only gives temporary relief. The acute pain, the frequent and copious vomiting of dark material, and complete or almost complete constipation persist. The acuteness of these symptoms, associated with a relatively mild degree of tenderness and rigidity in the right upper quadrant of the abdomen, and the absence of the referred pain and cutaneous hyperaesthesia associated with gall-stones, should afford grounds for a presumptive diagnosis of gall-stone obstruction. It is possible that the large size of the stone may enable it to be detected by radiography. I am not aware that a diagnosis has been successfully made in this way. The slides before you have been made from radiographs of large gall-stones placed on the anterior abdominal wall of obese women. It may interest you to know that shortly before I left Australia a colleague of mine on the staff of the Adelaide Hospital successfully removed a large gall-stone which was obstructing the intestine of a full-blooded male Australian native.

Surgical Relief of Intestinal Paralysis

With regard to late cases of intestinal obstruction in which the mechanical obstacle has been dealt with, the important question arises whether the intestinal paralysis and toxaemia should be relieved by a high enterostomy or by a lateral anastomosis. A high enterostomy (jejunostomy), the rubber tube being brought through the omentum, appears to me to achieve all that is necessary with the least possible strain on the patient, and to permit of the restoration of the intestine later on to its *status quo ante*.

ACUTE INTESTINAL OBSTRUCTION*

BY

SIR W. I. DE COURCY WHEELER

DUBLIN

I will confine my remarks to early post-operative obstruction of the small intestine and to acute obstruction of the large bowel, the result of new growth. The early recognition of post-operative obstruction arising after an interval of weeks or months is helped by the history. If the patient is within reach of a surgical centre, operation is seldom unduly delayed. Obstruction arising a few days following a simple abdominal operation is another matter. In this case we must consider whether the symptoms are due to so-called ileus or to filmy adhesions between loops of small intestine. Both conditions are often found.

The trouble commences to manifest itself after the first aperient; in a few hours the patient becomes restless and uncomfortable, and may vomit. An enema is given, and is reinforced by an injection of pituitary extract, with no result. The failure of response to aperients and enemata aggravates vomiting and increases abdominal distension and general distress. A second enema is given, but there is no peristaltic response.

Few will recommend reopening the abdomen within the first twelve hours unless the condition at the time of the recent operation was such as to suggest the likelihood of mechanical post-operative obstruction. The next twelve hours is marked by therapeutic inactivity. Vomiting prevents the patient taking anything by the mouth, and previous stimulating enemata have made the rectum intolerant. The patient should be given rest. Beneficent quietude is promoted by aspiration of the stomach through a Jutte tube, which may be left *in situ*; no liquid paraffin or other aperient should be introduced. If the pulse rate has not gone up, and if the tongue remains moist and the material aspirated from the stomach is still bile and mucus, there is a likelihood that an enema at the end of twenty-four hours will be followed by the passage of flatus and intestinal contents. It is taken for granted that during the period of anxiety—that is, from the time of the failure of the first aperient and enemata—fluids are generously administered. Normal saline is introduced by the drip method into one axilla from a flask above the head of the bed. It is absorbed as rapidly as it is introduced. Intravenous injections of 10 per cent. glucose solutions are given slowly every four hours. When the introduction of the needle is found difficult owing to badly defined veins, it is better to introduce a cannula and allow the solution to drip by the continuous method into the selected vein. Continuous intravenous medication is an immense advantage in selected cases.

But if, after the second twelve hours, an enema of turpentine, ammonia, or ox bile is ineffectual, immediate operation must be considered. While preparations are being made one or more intravenous injections of hypertonic salt solution are given slowly; 500 c.cm. of a 6 per cent. solution is an average quantity and strength, although the strength may be increased to 20 per cent. The replacement of the depleted chlorides in the blood sometimes has a dramatic effect in producing intestinal peristalsis and in combating the toxaemia associated with alkalosis. A copious bowel action may take place during the injection when there is no insuperable barrier to the intestinal onflow.

* Contribution to a discussion in the Section of Surgery at the Centenary Meeting of the British Medical Association, London, 1932.

In a case reported by Gosset, an infant of 4 months was operated upon for acute intussusception, and life was saved by the post-operative administration on two or three occasions of 50 c.cm. of a 20 per cent. salt solution given by the rectum. Gosset mentions two series of cases of acute intestinal obstruction. In the first the mortality was 50 per cent., but in the second it was only 11.1 per cent. The striking improvement in the second series is attributed by Gosset to the intravenous injection of hypertonic salt solution. If the slow injection of hypertonic salt solution produces colicky pains without bowel action a definite obstruction may be anticipated. While obstruction remains, the more fluids introduced the more active will the stomach become as an excretory organ. This is one of the minor disadvantages of the administration of copious amounts of glucose and other solutions. It necessitates more frequent aspirations through the Jutte tube. The other drawback is the frequent occurrence of rigors however carefully and slowly the solutions are given at intervals by the intravenous route. When introduced through a cannula by the drip method, however, these reactions do not occur. Anti-gas-gangrene serum is often given in these cases, but I have not seen any very convincing results.

The *Bacillus welchii* is a normal habitant of the intestinal tract. The bacteriological report of an appendix recently removed (during the course of a gall-bladder operation) states that the appendix appeared normal to the naked eye, and on microscopical examination showed an unusual excess of anaerobic flora. There were no signs of inflammation, no streptococci, and no trace of non-lactose-fermenting bacilli. Experimentally, the gas gangrene bacillus has been found in the normal jejunum in 17 per cent. of the animals investigated, but when obstruction exists the bacilli are found in great profusion—94 per cent. The organism apparently multiplies rapidly in the presence of obstruction, but there is no proof that the *Bacillus welchii* toxin is the lethal agent in intestinal obstruction.

When aperients and enemata, followed by rest and intravenous injections of hypertonic salt, all fail to produce the desired result, a spinal anaesthetic is given on the operating table. Spinal anaesthesia gives rise to considerable and almost immediate increase of intestinal peristalsis, even when the peritoneum is intensely inflamed. This procedure may occasionally be followed by an evacuation of the bowels on the table. If there is no action, the abdomen is opened with the certainty that definite obstruction will be found. Any operative procedure can be carried out with complete relaxation of the abdominal wall and no danger of aspiration pneumonia. Whether search for the site of the obstruction is to be made, or whether a blind high or low enterostomy is to be performed, depends upon the circumstances in each individual case. The Jutte tube acts in much the same way as a high jejunostomy. The tube for intestinal drainage may therefore with advantage be placed in a distended loop of intestine through an incision low down on the left-hand side of the abdomen.

Post-operative obstruction can be anticipated and prevented to some extent by gentle manipulation and well-planned operations. I think the elimination of the danger of post-operative obstruction is the most weighty argument in favour of the Ochsner-Sherren treatment of cases of acute appendicitis seen on the third day. Simple drainage of a well-walled-off appendix abscess is seldom followed by obstruction, and there is little or no risk of this complication following the removal of the appendix two months later. On the other hand, the majority of cases of post-operative obstruction follow early but delayed operations for the removal of an infected appendix.

Rough handling of the small intestine in attempts to reach a quiescent appendix through a high abdominal incision for gastro-enterostomy or cholecystectomy may lead to post-operative obstruction. For this and other reasons I have been converted to the Kocher plan of approach in operations on the gall-bladder and bile ducts. The appendix is removed through a second small far-out vertical incision planned as far as possible to lie directly over the caecum ; the coils of small intestine are neither handled nor seen. Transverse incisions for gastric work have a similar advantage.

C. H. Mayo states that the stomach tube is the most valuable test we have for the purpose of determining the condition of the stomach and the nature of the gastric contents ; it must be used repeatedly to prevent dilatation. He would prefer to see a stomach tube rather than a stethoscope hanging round the neck of his surgical intern. In a paper written ten years ago he preached the now well-known fact that if the abdomen is opened within twenty-four to thirty-six hours after the symptoms begin the filmy adhesions causing kinks and twists can be separated with little difficulty and with immediate benefit. Hypertonic chlorides and spinal anaesthesia may do likewise in these early cases of post-operative obstruction.

I recently had a case of high obstruction with tetany. It is necessary in such cases either to drain the duodenum by a tube passed through the pylorus or to perform a duodeno-jejunostomy.

Acute intestinal obstruction from colonic cancer is common. Prevention lies in early diagnosis, but the question of early diagnosis is outside the scope of this discussion. I should, however, like to emphasize that late diagnosis may be attributed *inter alia* to the fact that early symptoms often point to an upper and not a lower abdominal lesion. W. J. Mayo says that man has little consciousness of what is going on in the small intestine and right half of the colon, whereas he is more or less conscious of the action of the sigmoid.

Peristalsis is induced normally in the colon by certain foods and other factors—for example, the colon is coaxed to empty itself after breakfast by marmalade and a cigarette. Such stimuli in the presence of an early growth of the colon produce reflex spasm of the pylorus and a colonic peristalsis which is uncomfortable or painful and may lead to vomiting. The patient feels the distress above the umbilicus, and attributes it to the food he has just ingested. I have two cases in Mercer's Hospital at present illustrating these points. The one underwent a thorough clinical and *x*-ray investigation in another hospital for gastric symptoms. No lesion was found. He was admitted three months later to Mercer's with acute intestinal obstruction from carcinoma of the pelvic colon. The colon was resected after preliminary caecostomy by a modified Mikulicz operation two and a half years ago. He was readmitted last month for ventral hernia. But for some adhesions to the abdominal wall the site of resection could not be located—it was as if an end-to-end junction had been made. In the second case I explored the upper abdomen for persistent symptoms suggestive of duodenal ulcer ; the *x*-ray evidence and other examinations were inconclusive. At the operation nothing was found. A few months later the patient was readmitted for acute intestinal obstruction from a growth of the pelvic colon ; it was fixed and inoperable. In considering the treatment of such cases, it should be borne in mind that acute intestinal obstruction from colonic cancer does not necessarily indicate an extension of the cancer beyond the reach of radical operation. In many cases the growth is still local and the ultimate prognosis after a two- or three-stage operation is on the whole good.

ACUTE INTESTINAL OBSTRUCTION *

BY

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The results or surgical treatment of acute abdominal conditions have greatly improved during the present century, but the improvement has not been equally marked in the various constituent groups. Thus, at the Manchester Royal Infirmary in 1930, our mortality for acute appendicitis was only one-fifteenth and for gastro-duodenal perforations only one-sixth of the mortality in 1900, whereas for acute intestinal obstruction it was one-half.

The series of statistics presented by Mr. R. M. Vick is in continuation of that presented at the Bath meeting of the British Medical Association in 1925 by Mr. H. S. Souttar. Together they constitute the largest of any recent statistical series relative to acute intestinal obstruction. Mr. Vick's series shows that the mortality from this condition, in all its forms, is 26.2 per cent. This figure, however, is obtained by including cases of strangulated external hernia and of idiopathic intussusception, and as both these disorders are common and have the lowest mortality, their inclusion reduces considerably the mortality of the remainder. I propose, therefore, to exclude these, since, to my mind, the important practical point is to know the mortality of those cases of acute intestinal obstruction of which the diagnosis is not readily obvious. Only by gross carelessness can obstruction from external strangulated hernia be overlooked, and acute intussusception, with its characteristic symptoms and signs and its age of onset, ought to be capable of early recognition ; the latter, moreover, is not primarily an obstruction, and, indeed, as MacLennan has stated, the object of early diagnosis and treatment is to prevent an intussusception from becoming an obstruction. If, then, external strangulated hernia and intussusception are excluded from the series we are left with 2,588 cases with 1,040 deaths, a mortality of 40.1 per cent. This is the real mortality of acute intestinal obstruction *the cause of which is not readily obvious*, and it is this mortality we have to reduce. At the Manchester Royal Infirmary in 1900 it was 44.2 per cent. ; in 1925–30 it has been reduced to 35.2 per cent.

IMPORTANCE OF EARLY DIAGNOSIS

It is generally agreed that the outstanding reason for this high mortality is delay in the application of surgical treatment. The early diagnosis of acute intestinal obstruction has lagged behind that of the other groups of acute abdominal crises, and far too many cases are still sent into hospital with marked abdominal distension and advanced toxaemia. The stress that has, unfortunately, been laid in the past upon faecal vomiting as a sign of acute obstruction has tended to encourage the waverer to await its onset to confirm the diagnosis, forgetful of the fact that the hand that usually paints a complete clinical picture of any morbid state is the hand of death. The dictum of the late John B. Murphy that " procrastination kills more patients than cancer " is peculiarly applicable to acute intestinal obstruction. The absence of local physical signs in the early stages of the condition militates against its prompt recognition. In other groups of acute abdominal crises local physical signs, such as tenderness, muscular rigidity, etc., assist early diagnosis materially, but such signs are wanting in the early stages of obstruction. Their absence is, in fact, a definitely diagnostic point, and taken in conjunction with recurrent colicky pains, nausea and vomiting, and inability to pass flatus, should excite suspicion of obstruction. The early administration of morphine, by abolishing the warning signal of recurrent colicky pains, is also a factor in delaying the diagnosis.

SYMPTOMS OF ACUTE OBSTRUCTION

A fundamental and extremely important distinction must be made between those cases of *simple obstruction* to the onward course of the faecal stream, and those in which, in addition, there is interference with the blood supply of the portion of bowel concerned—that is, " *strangulation obstruction.*" Faeces may be arrested for days or even weeks, but no patient can long survive a complete arrest of the blood supply to his bowel. The acuteness of onset of the symptoms of acute obstruction depends mainly upon (*a*) the site of the obstruction, (*b*) the degree of associated strangulation, and (*c*) the extent of mesentery involved. Generally speaking, the higher the site of obstruction the more acute the onset, although in volvulus of the sigmoid colon the onset is extremely acute, probably because of the large extent of mesentery involved. The early *pain* is referred to the epigastrium and is paroxysmal, later becoming continuous as the obstruction becomes complete. The *vomiting*, like the pain, is at first reflex, and depends upon the acuteness of onset much more than upon the site of the obstruction. Later, vomiting is due to the mechanical obstruction ; the higher the site the earlier it appears, being most marked in " acute dilatation of the stomach " from compression of the third portion of the duodenum and in gall-stone impaction in the upper jejunum ; in low obstruction, as from carcinoma of the rectum, vomiting may be absent throughout. The vomit at first consists of gastric contents, later it becomes bilious, and later still, brown and faeculent in odour, constituting the so-called stercoraceous or faecal vomit. True faecal vomit—that is, the vomiting of actual faeces—is never seen in intestinal obstruction, but only in cases of gastro-colic fistulae, although it has been recorded in functional nervous disease. The *persistence of the vomiting* is the chief characteristic of intestinal obstruction. The *cessation of the passage of faeces and flatus* may not at first be absolute, and one, or even two, enemata may bring away faeces present in the bowel below the site of the obstruction ; *this does not, however, give any relief to the symptoms.*

AIDS TO DIAGNOSIS

Distension of the coil above the site of obstruction must, of course, be present in every case, though not always visible. If seen early the distension may be localized and so prove a valuable guide to the site of obstruction ; soon, however, it becomes uniform, and separate coils cannot be distinguished. The degree of distension varies inversely with the vomiting ; in high obstruction vomiting is marked with little distension, while in low obstruction the reverse is the case. The central distension of small intestine obstruction contrasts with the barrel-shaped abdomen (from distension of the flanks) of sigmoid obstruction. In volvulus of the sigmoid, distension comes on extremely rapidly and is intensely marked, the abdomen seeming as if it were about to burst ; this distension is in the twisted loop itself and not, as in other instances of obstruction, in the bowel above the volvulus. Steadily progressive abdominal distension is one of the most important signs of intestinal obstruction, and always calls for surgical intervention. To wait until distension is general is to render the operation much more difficult, and to make inevitable the escape of coils of bowel during the operation—a procedure calculated more than any other to increase the shock, besides paralysing the bowels from overstretching and increasing the toxaemia.

* Contribution to a discussion in the Section of Surgery at the Centenary Meeting of the British Medical Association, London, 1932.

Abdominal palpation may sometimes reveal the presence of a tumour in acute intussusception and malignant disease. *Rectal palpation* is of the greatest importance. In some cases the cause of the obstruction itself can be detected, as in stricture or growth of the rectum, or an intussusception may be felt. Sometimes through the anterior wall of the rectum a growth of the sigmoid can be discovered, or the presence of distended coils of small intestine in the pelvis definitely ascertained. Sometimes "ballooning" of the rectum, so suggestive of sigmoid obstruction, can be felt. Where there is reason to suspect the colon as the site of the obstruction a sigmoidoscopic examination ought to be made; the sigmoidoscope can be passed from eight to eleven inches, and from the point of view of ultimate operation it may be of considerable value to know that there is no obstruction within that distance, and that, if requisite, a short-circuit could be made to the sigmoid colon.

Auscultation is, I consider, a sadly neglected method of physical examination of the abdomen. To anyone conversant with the site and character of the normal intestinal sounds, the alterations in distribution, tone, and intensity in cases of acute obstruction are of considerable diagnostic value. In mechanical obstruction peristaltic rushes may cause a bubbling sound which increases in intensity as the site of obstruction is approached, and there culminates in a loud "explosion"; frequently a high-pitched metallic tinkling sound is heard, indicative of air bubbles rising through fluid in a distended cavity. The coincidence of these sounds with the height of the colicky pain is of great diagnostic importance, while the contrast between the turbulence of mechanical obstruction and the death-like silence of paralytic ileus is profoundly impressive.

X-ray Evidence.—Since the provisional diagnosis of acute intestinal obstruction has to be made by the general practitioner, who is only exceptionally able to apply this method himself, and, while often extremely useful, it is not essential, I have some diffidence in referring to it. Where available, however, as in hospital, valuable evidence can be obtained from a simple radiograph taken in the supine or prone position, without any previous preparation of the patient, and with a film sufficiently large to include the whole of the distended abdomen. This method does not seem to be much used in this country, though I have found it employed extensively in America and Canada. A simple radiograph of a normal adult shows gaseous shadows in the stomach and colon; in the small intestine area gas and fluid are so intimately mixed that no gaseous shadow is visible, although this is not true of the infant under 2 years. The demonstration of gas shadows in the small intestine area is therefore abnormal, and indicates interference with the normal passage of gas through the small bowel. In colonic obstruction the gas-filled caecum shows prominently, and the shadow of the gas-distended colon can be traced distally therefrom to end abruptly at the site of the obstruction. If the patient is not too ill to stand erect, a radiograph in this position will demonstrate gas over horizontal fluid levels—the characteristic "fluid-mirrors." A similar appearance may be obtained, where the erect position is impossible, by radiography while the patient lies on his side. The barium meal, so useful in subacute and chronic obstructions, is not permissible in acute forms.

The Site and Nature of Obstruction.—In the absence of any guide, such as a tumour palpable through the abdominal wall or per rectum, or the presence of a local distension only, by far the most important point to ascertain (and I believe that, with care, it is possible in most cases) is whether the obstruction is in the small or the large bowel. With regard to relative frequency, if we exclude intussusception and strangulated external hernia from the statistics presented to-day by Mr. Vick the obstruction was found in the small intestine in 56.2 per cent., and in the large intestine in 43.8 per cent. A history of previous intestinal troubles before the onset of acute obstruction is greatly in favour of the large intestine being concerned, since 91 per cent. of the obstructions in the colon are due to carcinoma, and this usually produces some previous warnings, such as colicky pains after meals, often travelling up to, and becoming arrested at, the same spot, frequently associated with borborygmi, sometimes audible to others, attacks of diarrhoea alternating with constipation, slight attacks of flatulent distension which pass off, and large quantities of mucus in the stools, sometimes blood-stained. It is, however, mainly upon a physical examination of the abdomen that one has to rely for a differential diagnosis: its shape, whether the bulging is confined to the flanks as in large-gut obstruction and especially when the ileo-caecal valve is competent, or whether it is mainly the central parts that are distended as in obstruction low down in the small intestine; whether the outlines of individual distended coils can be seen forming "ladder patterns" as in ileal obstruction; whether visible peristalsis can be detected in the dilated coils, or if not visible, whether the hardening of the intestinal wall can be felt as the peristaltic wave passes along it—"palpable peristalsis." The "keynote" to the diagnosis is the condition of the caecum: if this is visibly distended or, failing this, if it can be definitely felt to harden and soften alternately under the examining fingers then the obstruction must be in the colon distal to the caecum. Any doubt could be removed by simple radiography, where this is available, the presence of the gas-filled caecum indicating obstruction distal thereto.

It is not always fully realized how different is the outlook as regards malignancy between obstructions in the small and those in the large intestine. Our statistics at the Manchester Royal Infirmary over a period of ten years show that if an obstruction can be located to the large intestine there is a 91 per cent. chance of its being of a malignant nature—that is, roughly, a nine to one chance. On the other hand, if the large bowel can be excluded as the site of the obstruction the odds are 85 to 1 against malignancy.

TREATMENT

Although this is essentially operative the following accessory factors may prove extremely useful: (1) gastric lavage; (2) the introduction of large quantities of normal saline, or, where the vomiting has been severe, of hypertonic saline, either subcutaneously or intravenously, to replace the great loss of fluid and chlorides from the blood; glucose may be added with advantage and, in severe toxaemia, can be combined with insulin; (3) the administration of "anti-gas" serum[1]; and (4) enemata of bile.[2]

Spinal anaesthesia has great advantages in acute intestinal obstruction, especially where abdominal distension or regurgitant vomiting is pronounced. With the better muscular relaxation which it allows there is less tendency for the viscera to escape, and not infrequently the relaxed abdominal wall can be lifted away from the viscera and a Cameron surgilite passed under it, thus rendering possible visual detection of the site of the most distended coils and minimizing handling of the intestine. Vomiting is much less marked with spinal anaesthesia, and, even should it occur, with a conscious patient there is a greatly diminished risk of vomitus entering the trachea, and either "drowning" the patient forthwith or leading to aspiration pneumonia later. Whereas general anaesthesia tends to inhibit the normal motility of the bowels, spinal anaesthesia, by removing the

inhibitory action of the sympathetic, induces increased peristalsis. This, combined with the associated relaxation of the sphincters, sometimes results in an action of the bowels upon the operating table soon after the obstruction has been relieved, or, in cases of adynamic ileus even before the operation has commenced, thus avoiding the necessity therefor. In fact, the administration of a spinal anaesthetic has been advocated in cases of ileus as a test of the necessity for operative intervention ; if within fifteen minutes the passage of gas and faeces with relief of the distension is not obtained laparotomy should be undertaken forthwith.

The nature of the operation will depend upon the stage of the disease. In *early* cases, with little distension and good general condition, an exploratory laparotomy is undertaken on the usual lines, and, in the absence of any special clue to the site of the obstruction, through a right paramedian incision. Having discovered the cause of the obstruction, removal, short-circuit, or artificial anus proximal to the obstruction should be carried out in this order of preference. It is in *late* cases, with extensive abdominal distension and poor general condition, that it is difficult to decide what is best to be done, and it is pre-eminently in these cases that it is so important to ascertain, by means to which I have already referred, whether the obstruction is in the large or small intestine.

If the obstruction can be located to the colon I feel strongly that one should be content for the time being with a caecostomy, carried out under local anaesthesia or under nitrous oxide gas, through a gridiron incision in the right iliac fossa ; this will certainly relieve the obstruction. I appreciate that it yields no information as to the exact site or nature of the obstruction, the presence of any secondary deposits in the glands, peritoneum, or liver, and whether it is capable of removal at some future date, or, failing this, whether future short-circuiting is possible. All this information is, of course, essential before the final disposal of the case can be decided ; none of it, however, need necessarily be known *at the time of the caecostomy*, and it is far better to tide the patient over the immediate necessity (that is, the relief of the obstruction) than to attempt to acquire this information for the moment ; it can be more safely obtained when the obstruction has been removed. The only serious objection to this blind caecostomy is the risk that the obstruction in the colon may prove to be some form of strangulation-obstruction, and the strangulation still remaining after caecostomy would result in perforation and peritonitis. A careful analysis of the Manchester Royal Infirmary statistics has convinced me that the risk of a strangulation of the colon being overlooked at a blind caecostomy is at the most 1.5 per cent., and I think even the most optimistic advocate of preliminary exploratory laparotomy in these late cases must admit that it would add more than 1.5 per cent. to the mortality of blind caecostomy.

If, however, it cannot be decided before operation that the obstruction is in the colon, then a right paramedian exploratory laparotomy must be performed, and the condition of the caecum definitely ascertained by palpation from within. If distended I would, without any further exploration, perform immediate caecostomy, either through the original wound if the caecum will come readily up into it, or otherwise, after rapidly closing the laparotomy wound, I would perform a gridiron caecostomy. If the caecum is found collapsed, then the hernial orifices are examined from within ; a collapsed coil of ileum is picked up from the right side of the bottom of the pelvis, and is traced upwards to the site of the obstruction.

Between the early and the late cases there is an intermediate group where each case will require to be judged upon its merits ; should there be any doubt as to the patient's ability to withstand exploration " safety first " lies in blind caecostomy. It may be asked, since I advocate blind caecostomy as the method of choice for these late cases of colonic obstruction, why I do not advocate blind enterostomy for obstruction in the small intestine. The difference is one of the relative frequency of strangulation-obstruction. As I have shown, after relief of obstruction of the large intestine by caecostomy the risk of an unrelieved strangulation remaining undiscovered is at most 1.5 per cent. The series of statistics presented to-day show that in the small intestine, even after relief of the obstruction by enterostomy, the risk of unrelieved strangulation remaining would be at least 60.4 per cent.

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SHOCK IN ACUTE OBSTRUCTION OF THE SMALL INTESTINE*

BY

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Shock may be clinically defined as that condition of diminished metabolism and impaired circulation arising directly as the result of trauma or toxaemia. It may develop suddenly as the consequence of excessive stimulation of many afferent nerve fibres, or the sudden absorption of certain noxious substances ; or may show itself more gradually as the result of less acute but more prolonged stimuli, or the gradual absorption of poisons manufactured in the patient's body.

Most of the symptoms of shock would naturally follow from the acknowledged circumstance that there is a considerably diminished volume of circulating blood fluid. Subnormal temperature, small pulse, increased pulse rate, pallor, sweating, are present to a variable extent. Finally the blood pressure falls. The mechanism for the maintenance of the blood pressure is one of the last of the bodily reflexes to fail. Vaso-constriction for a time masks the early stages of shock before the fall in blood pressure is registered. The period of latent shock is characterized by *instability* of the blood pressure, and its recognition is of the greatest importance to the surgeon, especially in cases of intestinal obstruction.

Acute obstruction of the small intestine furnishes examples of each type of shock. Strangulation of a coil of gut with its mesentery may cause sudden and extreme shock. The sudden release of a strangled coil may also lead to shock from the rapid absorption of the toxic substances previously imprisoned in the coil. Shock develops more gradually when the obstruction is less acute. As the result of the absorption of the decomposing intestinal contents the circulation is depleted, and latent shock develops, though the blood pressure may still keep up. The instability of the blood pressure is demonstrated by its rapid fall when operative procedures are undertaken. The pulse-pressure gives a better indication of the real condition of the patient.

The treatment of shock in these cases resolves itself into maintenance of the fluid in the circulation, keeping up the body heat, removing the poisonous contents of the bowel and stomach, antagonizing the poisons which have been absorbed, and carrying out only those surgical manipulations which are necessary to save life. The judgement of the surgeon is chiefly shown by his knowing exactly how much he can safely do in these difficult cases.

* Contribution to a discussion in the Section of Surgery at the Centenary Meeting of the British Medical Association, London, 1932.

ACUTE INTESTINAL OBSTRUCTION*

BY

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All discussions on acute intestinal obstruction begin and end on a note of admonition to the practitioner that on him rests a great responsibility because the key to the problem lies in early diagnosis and prompt surgical treatment. If the practitioner does delay in referring these cases for surgical treatment it is largely because he has started out with a false picture of the cardinal signs and symptoms of intestinal obstruction, a picture for which we who teach are responsible. It would probably be better if in our teaching we dwelt only on the early signs and symptoms of obstruction and omitted altogether that classical picture of the hollow-eyed patient with clammy skin, distended abdomen, and faeculent vomiting—a picture not of surgical urgency but of impending dissolution. We must remember, however, that in very many cases the doctor is not called in until the signs of danger are already obvious. We must therefore endeavour to educate the public to realize that acute abdominal colic with vomiting demands medical advice and not a purgative. Such education must not be by posters and press propaganda, but through the various organizations, such as health visitors, Red Cross, and ambulance classes, etc., which have already done so much to spread useful knowledge on matters relating to health.

Amid the great variety of conditions which give rise to intestinal obstruction and, if untreated, prove fatal within a longer or shorter period, we can recognize three fundamental factors, one, two, or all of which may be operative in the individual case. Firstly, there is the factor of obstruction to the onward passage of intestinal content. Secondly, there is interference with the blood supply of a portion of the bowel ; thirdly, the formation of a closed loop of bowel.

Simple obstruction of the lumen, the first factor, seen in its simplest form in gall-stone ileus, if situated high in the small intestine causes death mainly by dehydration and loss of chlorides ; if low down, by toxaemia as well. Armour and his co-workers in the Department of Surgery in Edinburgh showed that a dog with a simple high intestinal obstruction may be kept alive and without any signs of toxaemia for over five weeks by supplying fluid and chlorides below the level of the obstruction. There is an overwhelming body of clinical and experimental evidence on the necessity for supplying generously both salt and water to all cases of obstruction.

Interference with blood supply, the second factor, is seen in its purest form in mesenteric embolism ; it is, however, the dominant factor in all strangulations. Apart from the element of shock resulting from a twist or compression of the mesentery, we have the certainty of peritoneal infection in cases which are left for long unrelieved.

The closed loop, the third factor, is seen in its simplest form in acute appendicular obstruction. We know that it is the content of the loop at the time of obstruction which determines the subsequent course. If the loop contains much faecal matter this will decompose and tension gangrene will inevitably follow. Fortunately the small intestine usually contains little in its lumen at the time of onset of obstruction, and this factor is not the predominant one in internal and external strangulations. In the figures brought before us to-day we have not considered the appendicular obstructions which contribute at least 2,000 deaths a year in this country. No discussion on acute intestinal obstruction can be complete, however, without reference to what is perhaps the commonest variety. The cause of death in closed loop obstruction is rupture with consequent peritonitis. It deserves, therefore, a foremost place in our catalogue of urgency. Obstruction and strangulation by bands and adhesions, the result of previous abdominal operations, occupy a prominent and significant place in the statistics shown us to-day. Many of them are doubtless unavoidable, some are due to rough handling and needless exposure of the viscera—to a lack of that *reverence for the tissues* which Lord Moynihan has done so much to inculcate.

* Contribution to a discussion in the Section of Surgery at the Centenary Meeting of the British Medical Association, London, 1932.

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This must be *prompt but not precipitate*. In dealing with cases of intestinal obstruction as they arrive at our hospitals we must remember that they are never so urgent but that there is time for two pre-operative measures, each of which may be life-saving—namely, a copious subcutaneous infusion of saline, which may be followed up by an intravenous injection of 50 c.cm. of 5 per cent. saline, given on the operating table ; and the passage of a stomach tube. The latter is a necessary safeguard if inhalation anaesthesia is to be employed, otherwise the patient may drown in his own vomit. During this pre-operative period an endeavour should be made to locate the obstruction. Much may be learnt from a thoughtful clinical examination—the shape of the abdomen, visible and palpable peristalsis, the sites of splashing elicited by " dipping " palpation, the distribution of the gurgling and tinkling sounds on auscultation, the amount of fluid taken by enema, and finally, if the patient's condition permits, the outlines of gaseous distension as seen in a straight *x*-ray photograph.

The anaesthesia of choice is spinal, provided the blood pressure can be maintained by ephedrine. When the pressure is low, a local anaesthetic, supplemented by gas and oxygen, is probably safer. *B. welchii* serum is of real value in all cases where gangrenous bowel has to be dealt with—for example, where a perforated gangrenous obstructed appendix is removed or where in a strangulated internal or external hernia devitalized bowel has to be resected. In the straightforward case of simple obstruction I have seen no benefit from its use, nor, indeed, would one expect to do so.

In the very worrying post-operative variety of obstruction, where doubt exists as to whether one is dealing with adynamic ileus or a true mechanical obstruction, the following measures have been found useful: (1) the leaving down of the duodenal tube ; (2) the administration of hypertonic saline intravenously ; and (3) the giving of a spinal anaesthetic, all being ready for operation should no bowel action result. If distension and vomiting are the only symptoms, conservative measures should be persevered with ; if, however, there is any colicky pain, if gurgling sounds are heard on auscultation, and if splashing in dilated coils of small intestine can be detected, operation should be resorted to without delay.

If we are to reduce the distressingly high mortality in acute intestinal obstruction I believe we must: (1) spread the knowledge of the *early signs* of the malady, firstly among our students and practitioners, and secondly among the public, through our health organizations ; (2) study the patients before embarking on operation, that we may, if possible, locate the obstruction and thus avoid at operation all needless handling and exposure ; (3) prepare the patient before operation by effecting a replacement of the fluid and chlorides lost by vomiting and by ensuring an empty stomach ; and (4) at operation depend as far as possible on spinal or local anaesthesia, expose and handle viscera as little as possible, and do the minimum consistent with saving life.

ACUTE INTESTINAL OBSTRUCTION*

BY

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General practitioners are often blamed for failure to recognize intestinal obstruction in its early stage. They are blamed most unjustly. In the early stage there is nothing more difficult to diagnose; in the later stages the diagnosis is so easy that he who runs may read. I propose very briefly to mention a few only of the points which are of importance.

Early diagnosis is the key to success. Severe pain of sudden onset unaccompanied by rigidity or marked tenderness should always raise a suspicion of intestinal obstruction. When the pain is accompanied by rigidity the symptoms may suggest the perforation of a hollow viscus. We are told in our textbooks that the rigidity of intestinal colic is superficial and less marked than in cases of perforation. This is not strictly true. The rigidity of intestinal colic may be board-like in its intensity, but there is an important difference. In intestinal colic, gentle massage with a warm hand will gradually overcome the rigidity; in perforation, no coaxing will induce the muscles to relax their protective spasm. If, in addition to pain, there is inability to pass flatus or faeces, surgical treatment is indicated. A person who is passing neither wind nor faeces is a dying person. If this cannot be ascertained from the history of the illness the administration of two enemas at intervals of one hour, as indicated by Sir Henry Newland, will settle this point and confirm or negative the diagnosis.

The suggestion that radiography should be employed in the diagnosis of intestinal obstruction is one which should be condemned whole-heartedly. Sir Henry Newland has stressed the value of the "seeing eye," and I am in most cordial agreement with him. At the present time, there is a tendency to rely too much on laboratory-made diagnoses. I prefer the "seeing eye" of a living clinician to the scientific eye of a dead machine. Even if the diagnostic value of radiography in intestinal obstruction were more than problematical, the unfortunate patient, by the time his examination and preparation are completed, has had quite sufficient test of his patience and endurance. In dealing with intestinal obstruction, the surgeon should have the courage of his convictions and get on with his job. I began my professional life as an anaesthetist, and my experience during the years I was resident at St. Bartholomew's Hospital taught me three important lessons. First, the importance to the patient of a short period of rest after the preparation for operation is completed—when the patient has been prepared, a small dose of morphine should be administered and the patient allowed to rest for at least half an hour. Secondly, the importance of keeping the patient warm. In more senses than one, a cold slab is the death-bed of the acute abdomen—a heated operation table is a vital necessity, and the patient's extremities should be bandaged in cotton-wool. Thirdly, that patients who are acutely ill will not stand prolonged operations. After half an hour the pulse begins to fail, and after forty-five minutes this failure becomes very pronounced.

The aim of treatment should thus be the relief of obstruction by the simplest method and in the shortest time possible. Two great principles should be observed: (1) no form of anastomosis or resection is permissible in cases of acute intestinal obstruction; and (2) drainage of the bowel should be established wherever necessary. I am aware that at the present time drainage is not fashionable; indeed, by some it is regarded as a confession of ignorance on the part of a stagnant and indecisive mind. This heresy is a heritage of the war, when claims were made as to the success of excision and primary suture of wounds which were not confirmed by those who witnessed the ultimate results of this method of treatment. If the obstruction cannot be removed, or if, after its removal, the intestine is too paralysed to empty itself, drainage of the bowel is imperative. In the statistics so admirably presented by Mr. Vick, resection was performed in 10 per cent. of the cases, and I think less heroic measures would result in a diminished mortality rate.

To sum up, the important points are: (*a*) early diagnosis and early operation; (*b*) preparation of the patient followed by a short period of rest; (*c*) a heated operation table; (*d*) no resection or anastomosis; (*e*) drainage of the bowel when necessary—sepsis demands drainage; surely this is one of the eternal verities of surgery.

* Paper read in the discussion in the Section of Surgery at the Centenary Meeting of the British Medical Association, London, 1932.

STATISTICS OF ACUTE INTESTINAL OBSTRUCTION*

BY

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In 1925, at a meeting of this Section of the Association at Bath, a very useful and interesting discussion took place on the subject of acute intestinal obstruction, and it was suggested that after the lapse of a few years the discussion should be repeated in order that all our ideas might be ventilated again and our knowledge brought up to date. Unlike most really useful suggestions this one has been carried out, and the stage is now set for another full-dress discussion on the diagnosis, treatment, and prognosis of the many conditions, all of them potentially serious, which are included under the wide term "acute intestinal obstruction."

In 1925 Mr. Souttar presented a carefully prepared set of figures showing the results of treatment of cases of acute obstruction at seven large London hospitals during the years 1920 to 1925. At the invitation of the officers of this Section I have prepared another series for the years 1925 to 1930, and I have to thank Mr. Souttar for the use of all his available material and for his help. It has been my deliberate endeavour to adhere to the classification and arrangement adopted in 1925, in order that we may be enabled the better to compare the two sets of figures. This has worked out so satisfactorily that it would be possible, if it is considered advisable, for the two sets of figures to be fused together and thus give us records with a considerable amount of clinical detail of nearly 10,000 cases. I have introduced certain modifications and elaborations: my period is six years instead of five, and I have widened the scope of the investigation by collecting from twelve hospitals in London, eight in the provinces, and one in Scotland, making twenty-one in all. Although this return does not include any of the hundreds of cases operated upon in cottage hospitals or in private practice, it must be admitted to be a very representative statistical return.

I have listened far too often to the dreary recapitulation of statistics ever to wish to condemn even my greatest enemy to so unkind a fate, and I will communicate the figures to you as quickly and as painlessly as I can. First of all, I would call your attention to the graph which I have prepared. There, in diagrammatic form, I have set forth the facts. The number of cases is 6,892. They

* Communicated to the Section of Surgery at the Centenary Meeting of the British Medical Association, London, 1932.

are included under the nine main headings, some of the minor headings being omitted for the sake of clearness. The first set of columns shows the age incidence of the various types, indicating the proportion of cases occurring in each decade. These columns show that gall-stone obstruction occurs most commonly between the ages of 50 and 70; obstruction as the result of carcinoma, in the sixth and seventh decades. Adhesions and internal strangulation are among the dangers of early adult life, while practically all the cases of idiopathic intussusception—940 out of a total of 989—occur before the age of 10, and most of them within the first two years of life. Volvulus occurs after the age of 40, as a rule, and the age incidence of the various types of strangulated hernia is clearly shown. On the right of the graph you see represented the deaths and recoveries. By the shaded areas are represented all those who have to thank a wise doctor and a skilful surgeon for their lives, and by the black areas those who have died, often in the greatest misery and distress. The actual figures are represented on

COMBINED STATISTICS OF TWENTY-ONE HOSPITALS FOR THE YEARS 1925–30 INCLUSIVE

The statistics are compiled from the records of the following hospitals. After each hospital is given the name of the surgeon or registrar to whom thanks are due for collecting the data on which the return is based. The figures in parentheses indicate the number of cases at each place.

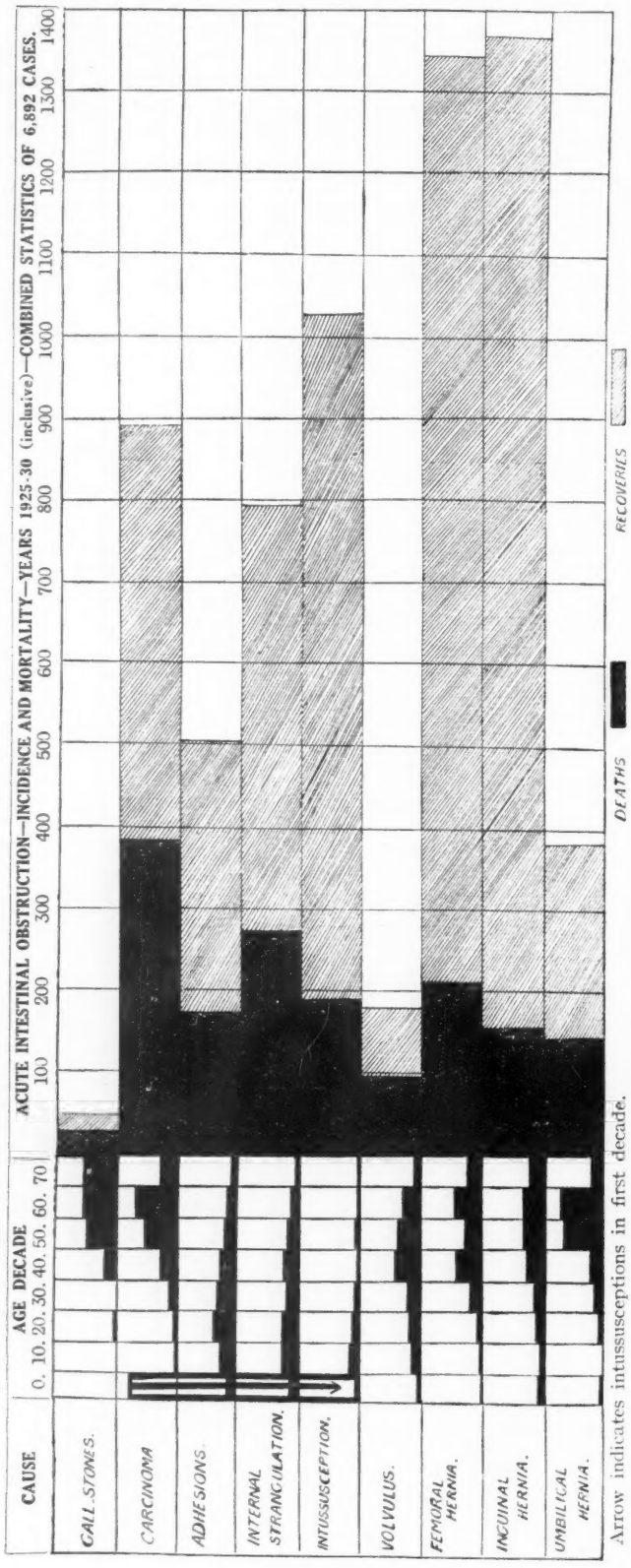
St. Bartholomew's Hospital (305) Mr. Naunton Morgan.
Charing Cross Hospital (68) Mr. Fitzsimons.
St. George's Hospital (161) Mr. Marnham.
Guy's Hospital (207) Mr. Northfield.
King's College Hospital (130) Mr. H. J. C. Wood.
London Hospital (863) Mr. Stanford Howard.
St. Mary's Hospital (104) Mr. Porritt.
Middlesex Hospital (144) Mr. Wiles.
St. Thomas's Hospital (384) Mr. Sworn.
University College Hospital (95) Mr. Flemming.
Westminster Hospital (66) Mr. Kendall.
Royal Free Hospital (57) Miss G. Smith.
Royal Victoria Infirmary, Newcastle-on-Tyne (1,019) Mr. G. A. Mason.
Royal Infirmary, Manchester (1,011) Mr. Rowbotham.
General Hospital, Birmingham (175) Mr. Fauset Welsh.
Royal Infirmary, Liverpool (88) Mr. Cosbie Ross.
General Infirmary, Leeds (664) Mr. Armitage. Mr. Pyrah.
Royal Infirmary, Sheffield (295) Mr. Holdsworth.
Royal Infirmary, Bristol (322) Mr. Jackman.
General Hospital, Bristol (176) Mr. J. S. H. Griffiths.
Royal Infirmary, Edinburgh (558) Mr. Weevil.

CAUSE	AGE DECADE								SITE				DURATION IN DAYS					OPERATION					RESULT		TOTAL	MORTALITY
	0-	10-	20-	30-	40-	50-	60-	70	Small Intestine	R. Colon	L. Colon	Rectum	½	1	2	4	+	Reduction	Enterotomy	Enterostomy	Anastomosis	Resection	Lived	Died		
1. INTERNAL OBTURATION:																										Per cent.
(a) Foreign bodies	—	3	1	—	—	1	—	—	5	—	—	—	1	2	—	—	2	—	5	—	—	—	4	1	5	20
(b) Enteroliths	—	—	—	—	—	—	1	1	2	—	—	—	—	—	—	1	—	2	—	—	—	1	2	—	2	0
(c) Faecal masses	1	—	1	2	5	2	4	2	3	—	9	5	1	1	1	3	6	4	1	6	1	—	13	4	17	23.5
(d) Gall-stones	—	—	1	—	5	13	14	14	46	—	—	—	1	5	8	9	17	—	37	5	1	—	14	33	47	70.2
2. INTERNAL CONSTRICTION:																										
(a) Carcinoma	—	5	14	50	131	251	290	147	17	107	668	107	8	66	179	206	347	—	28	770	101	63	514	381	895	42.6
(b) Cicatricial	3	3	6	6	6	6	4	2	18	7	9	3	—	2	6	6	10	1	1	13	13	4	24	12	36	33.3
(c) Congenital	39	1	1	—	—	—	—	—	8	3	1	29	5	9	10	4	11	3	—	29	1	1	17	23	40	57.5
3. EXTERNAL CONSTRICTION:																										
(a) Adhesions	24	71	96	87	80	69	54	24	468	23	21	—	26	84	107	86	75	365	8	72	60	32	339	166	505	32.9
(b) Compression by tumours	1	—	2	6	6	8	4	2	15	2	7	5	—	1	8	4	12	5	—	15	4	2	17	12	29	41.4
(c) Internal strangulation	84	138	132	114	130	117	71	36	762	31	13	—	73	195	275	119	87	510	4	76	52	103	519	271	790	34.3
4. EMBOLISM AND THROMBOSIS	—	—	1	3	13	16	11	5	44	3	1	—	5	8	17	4	9	3	1	12	11	18	4	45	49	91.8
5. INTUSSUSCEPTION:																										
(a) Idiopathic	940	23	12	5	4	1	2	1	904	83	8	3	360	367	124	57	24	916	2	11	28	57	815	174	989	17.6
(b) With tumour	12	11	5	4	2	7	1	3	29	8	10	—	1	10	15	5	11	23	6	4	8	20	33	12	45	26.7
6. VOLVULUS:																										
(a) Small intestine	3	8	13	14	12	17	10	6	85	—	—	—	17	17	14	9	13	50	1	12	8	18	32	53	85	62.4
(b) Caecum	—	1	6	3	8	9	8	—	—	35	—	—	2	3	3	6	10	23	1	16	4	4	19	16	35	45.7
(c) Sigmoid	1	4	3	7	17	9	13	2	—	—	56	—	3	6	11	6	20	31	7	21	6	9	33	23	56	41.0
Total (excluding hernias)																							2399	1226	3625	38.8
7. EXTERNAL HERNIA:																										
(a) Femoral	4	11	48	172	301	272	327	223	1305	18	16	—	235	314	230	119	92	1243	3	37	51	115	1134	214	1348	15.9
(b) Inguinal	108	74	122	126	216	264	264	189	881	141	55	1*	369	411	178	57	35	1277	2	13	32	64	1220	158	1378	11.5
(c) Umbilical	3	1	4	15	46	127	135	40	231	77	26	—	39	78	83	38	34	317	2	26	16	38	223	148	371	39.9
(d) Others	1	1	4	22	34	47	38	23	89	15	7	—	13	19	32	13	13	120	1	20	12	17	107	63	170	37
Total hernias																							2684	583	3267	17.8
Grand total																							5083	1809	6892	26.2

* Stomach.

This table gives a detailed analysis of the various types of acute intestinal obstruction under the main headings and the sub-headings. It shows the age incidence of acute obstruction of each type in the first set of columns. In the second set it gives the site of the obstruction; in the third, the duration of the disease from the onset to the day of operation; in the fourth, the actual operation performed; and finally, the survivals and deaths, the totals, and the percentage mortality.

the graph—for example, out of 1,378 cases of strangulated inguinal hernia 158 patients died and 1,220 survived. In the smaller table you will see a comparison of mortality rates in the two sets of figures, years 1920–4 and 1925–30.



You will note that the mortality rate has been materially reduced in intussusception, and in inguinal and femoral hernia, especially when one considers that this is a much larger series.

And now to turn to the statistical table. I should like first of all to acknowledge the unstinted help of the people whose names are at the top of the table: without them this return could never have been made. The geographical distribution of the cases is interesting. The number of cases in the whole of the London hospitals is about the same as in the provinces, excluding Scotland. In London, the London Hospital heads the list with more than twice as many as any other hospital. In the provinces Newcastle has the largest number, and Manchester only eight cases less; whereas in Leeds the number is 664. In Liverpool the small number is accounted for by the fact that all the records are not available. The arrangement of the figures in the columns speaks for itself; on the left you have the age decade, followed by details of the site of the obstruction, of the duration of the disease—by which is meant the interval between the onset of the obstruction and the date of operation—and then follow the actual detail of the operation performed, the result, the totals, and the mortality.

The question that we must ask ourselves is whether we are going to sit down under these figures or whether we can improve them, and we must realize that, excluding carcinoma and one or two minor headings, all these patients, if their condition is diagnosed early and treated early and efficiently, should live. Just picture the difference between the early and the late case of acute intestinal obstruction. We have all known that glorious feeling—say, when operating upon an obstruction by a band—of opening the abdomen, finding the little string tied across the bowel, cutting it, watching the intestine joyfully reopening its occluded lumen and passing on its contents, and of closing the wound, knowing well that we have saved that patient's life even more surely than if we had snatched him out of a fire. But unfortunately we have all experienced the other side when dealing with a late case of obstruction—a patient, moribund and cold; when, remembering the old adage that "if you put a patient on the operating table cold you will take him off colder still," we have done everything in our power to improve the patient's condition sufficiently to make him even a sporting operative risk. Then we have opened the abdomen, probably under spinal anaesthesia, to let out a thin blood-stained fluid, followed by a gangrenous gut; and we have realized with a sickening sense of frustated endeavour that however quickly and efficiently we work the chance of success has been taken from us. If we accept the contention that by early diagnosis and treatment these people may be saved from miserable death, then these mortality rates are too high. And if by showing you these figures I have even in the smallest degree helped to reduce that mortality in the years to come, my labour has not been in vain.

Comparison of Figures for Two Periods

	Mortality Per Cent.	
	1920-4	1925-30
Gall-stones	50	70.2
Carcinoma	43.5	42.6
Adhesions	31	32.9
Internal strangulation	33	34.3
Intussusception (iodiopathic) ...	22	17.6
Volvulus	51	52.2
Femoral hernia	20	15.9
Inguinal hernia	16	11.5
Umbilical hernia	35	39.9

This small table shows the comparative mortality of the two series of statistics mentioned in the text—in the years 1920-24, 3,064 cases, and in the years 1925–30, 6,892 cases. It shows a material reduction in mortality under the headings of intussusception, femoral and inguinal hernia. It is interesting that the total mortality in the two series is identical—26.2 per cent.

CORONARY THROMBOSIS *

BY

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Coronary thrombosis is the name which has come into use in recent years for the serious heart attack which results from thrombosis in a coronary artery or branch. The series of events following such complete obstruction is known as cardiac infarction, an alternative term with the same clinical meaning as coronary thrombosis. We do not propose to refer in detail to the pathological process, but in brief it is as follows. A large branch of a coronary artery, often but by no means exclusively the descending branch of the left coronary, happens to be the seat of a stenosing atheroma which narrows the lumen. At the point of greatest constriction, and perhaps favoured by atheromatous ulceration, thrombosis takes place and completely blocks the vessel. The resulting infarct occupies the territory hitherto supplied by that vessel. As the wall of the ventricle is thus involved, it may be that the necrotic reaction reaches the endocardium to precipitate an intracardiac thrombus. Less often the process reaches the pericardium to produce a patch of pericarditis over the infarct (infarct-pericarditis). Such is a usual post-mortem finding when sufficient time has elapsed before death for the infarct to form. On the other hand an infarct may result from extreme coronary narrowing without the complete occlusion of actual thrombosis, and yet produce all the symptoms of "coronary thrombosis." Syphilitic stenosis of both orifices may give the same picture. But I wish to leave quickly this aspect of the condition, for we are to deal with the clinical results of infarcts from which patients often recover, a fact only realized in the last decade.

THE CLINICAL PICTURE

An attack of coronary thrombosis is most commonly seen in a man over 40 who has apparently been in good health, or who has been inconvenienced for some months or years by anginal pain on undue exertion. While at his usual occupation, or while at rest or even asleep in bed, he suddenly begins to feel a dull heavy pain at the sternum or across the front of the chest. He will often think it is indigestion, but the pain persists and grows to such an intensity in a few minutes or an hour that he fears, and rightly fears, that he is in the clutches of something more serious, even at grips with death. He sweats in anguish; he may feel sick or actually vomit; maybe he faints. The pain becomes a relentless grind, and often extends through to the back and down both arms. A sense of constriction may be felt, though this is not essential to diagnosis. By this time he is so anxious and distressed that he may be unable to keep still because of his agony, and turns restlessly in bed or paces about the room. Unless the patient succumbs, after the lapse of two or three hours or longer the pain begins to abate, the next day little being left beyond a residual ache in the chest, though slighter attacks may recur for two or three days.

The doctor will find the patient in obvious distress and danger, pale rather than cyanosed, restless rather than still. His one complaint is of pain, and his breathing is no more disturbed than would be expected with such pain. The pulse may not indicate the grave nature of the attack, and no practitioner should be misled by its comparative normality into thinking this is no "heart attack": usually it is regular and only moderately increased in rate. Occasionally the rhythm is disturbed by auricular fibrillation or heart-block. The pain may be so abrupt and occupy such a site that a physician will often wish to exclude an acute abdominal condition requiring surgical intervention; but, having done so, he should speedily make the diagnosis of coronary thrombosis and give the patient relief by an injection of 1/4 grain of morphine, repeated as often as necessary to fulfil his obligation of relieving pain. The chief features of the further course include a rise of temperature as after an infarct elsewhere, though often it is less pronounced. In a certain number of cases a pericardial rub is heard, though perhaps only for a few hours. Shortly after the attack the blood pressure falls from shock, and a systolic reading of 100 mm. Hg is not unusual. It may happen, however, in a patient with a really high blood pressure that this fall does not bring the systolic pressure below normal limits, though it is lowered greatly for him.

The end of the terrible attack described is no more than the beginning of a long illness which is shadowed by death or complications. Sudden death may occur at any stage, though the risk of it diminishes with the passing of a few days and especially weeks. Heart failure of the congestive type may follow the attack within a day or two. Embolism is a complication which looms within the first three or four weeks. A fragment of the intracardiac clot is dislodged and launched into the systemic or pulmonary circulation. Despite these ominous risks, the average patient will get through his illness to comparative safety; indeed, if the illness takes a favourable course from the cessation of pain, the patient may feel so well that he has to be told why he should remain in bed.

For the purposes of this introduction I have had to limit my description to that of an average case, though clearly varying sizes of cardiac infarct grade the severity of an attack. Further, it may occur in a patient comparatively young whose coronary arteries are in fair condition apart from the flaw exposed by the infarction. It may, however, seize an older patient known to have been subject to undue dyspnoea on exertion or to angina of effort, showing that it is a faulty myocardium which has been infarcted.

AETIOLOGY

In considering certain points of especial interest, I would first refer to the aetiology of coronary thrombosis, which is a local product of arteriosclerosis. The most practical view of arteriosclerosis is to consider it as common to all of us as we age. In some it arrives early, in others late, but it is inevitable. It is unfortunate when premature, or when it is situated in the vital arteries of the heart or brain. As we do not know the fundamental cause of arteriosclerosis, we must likewise admit that we do not know that of a coronary thrombosis. Yet our ignorance of the primal cause need not deter us from seeking for secondary or accessory causes which may favour a local exacerbation of the arterial disease. Cardiac infarction is seen most commonly in patients over 45, though it is by no means unknown between 30 and 45, or even below 30. It is a disease of the late middle-aged as much as of the elderly. Women are not so liable to it as men, but there is a danger in practice, for this and other reasons, of its not receiving in women the prompt attention it deserves. Hypertension is present in a fair proportion of cases, though it is in no sense an essential part of the disease. Syphilis rarely enters into the aetiology, though its consideration is important in differential diagnosis.

* Paper read in opening a discussion in the Section of Medicine at the Centenary Meeting of the British Medical Association, London, 1932.

VARIATIONS IN SYMPTOMS AND SIGNS

The symptoms vary chiefly with the size of the infarct and the previous condition of the heart. Although the typical attack is now easy to recognize, much remains to be done in assessing the clinical features of minimal thromboses, or of those occurring in patients already the subject of other cardiac disease. Thus, an infarction may explain the sudden occurrence of auricular fibrillation, flutter, or heart-block. It may determine the onset or accelerate the progress of congestive heart failure in the course of hypertension. Another matter bearing on general medicine is that a cerebral or other embolus may once have been seated on a cardiac infarct. Even apart from these complicated cases, it is now quite certain that a cardiac infarct may for some unexplained reason lead to dyspnoea and failure without pain at all. It may also be one of the causes of certain syncopal attacks with shock and collapse which are seen in elderly patients.

Because there are no typical physical signs until long after the diagnosis should be made, I barely mentioned them in describing a typical case of coronary thrombosis. This lack of signs has proved a great hindrance to its wider recognition. We have been trained to rely more upon our own observation than upon the patient's statement. To make any progress in the diagnosis of coronary thrombosis this attitude must be reversed. The diagnosis can and should rest upon the symptoms and the history, physical examination seldom adding anything to clinch it. Let us remember that coronary thrombosis is primarily an arterial disease. Therefore the recognized marks of arteriosclerosis are the signs to be sought. Of these may be mentioned the accentuated aortic second sound and the thickening of the superficial arteries, of the finer visible arteries in the retina, and of the largest artery—the aorta—as revealed so clearly by radioscopy. Although it is true that the heart sounds are often distant, less distinct than usual, we dare not place much reliance on a sign so common in other conditions and so dependent on the personal factor. The heart is little or not at all enlarged unless there has been associated hypertension to cause it.

DIAGNOSIS AND PROGNOSIS

The diagnosis will be helped by requiring the patient to map with his index finger (not with his hand) the total area of the pain. This will almost invariably include part of the sternum, a strong diagnostic point being sternal pain. It is best to avoid the ambiguous phrase of "pain over the heart," with its loose associations in the mind of doctor and patient, "sternal" being a safer term than "precordial" for use in diagnosis, which, as already emphasized, rests upon the patient's description of his attack. Fortunately the electrocardiograph provides evidence which compensates for this absence of physical signs. In differential diagnosis we must be prepared to reject the patient's belief, often no more than a pathetic hope, that it is indigestion. More difficulty may arise in excluding acute abdominal conditions such as perforated gastric or duodenal ulcer and acute cholecystitis, and conditions like pulmonary infarction and spontaneous pneumothorax, which also cause sudden and severe pain in the chest.

Referring to prognosis—as sudden death may occur at any time from the onset of pain, it must be admitted that coronary thrombosis implies a dangerous condition. Our attention, however, should be focused on the patient's chance of survival, for experience begins to show (as in so many other new diseases) that the outlook is by no means so gloomy as was at first thought. When the patient has weathered for a few days even an intense attack, the natural expectation should be that he will not only reach convalescence, but will recover a fair degree of health, even good health, which may continue for years to come. A second attack is relatively infrequent—a fact which should be conveyed to the patient. Although the scope of physical signs has been decried in the immediate diagnosis, we need the strictest assembling of all that can be learnt about the cardiovascular system before we are in a position to attempt the further prognosis in a given patient.

PRINCIPLES OF TREATMENT

As students we found it difficult to understand why our teachers were so insistent upon teaching us diagnosis and were so apparently neglectful of treatment. If this paradox required an explanation, either to the student or to the layman, we could scarcely give a better example in justification than that of coronary thrombosis. Once the diagnosis is made, the treatment is indeed obvious. There must be quick relief from the pain, and ample time for rest to favour healing of the infarct. Morphine is indispensable, and the use of this veritable godsend should be the first care of the physician when he has made the diagnosis. Morphine also provides the best means of limiting the resultant shock by elimination of the pain factor. Digitalis is indicated directly signs of congestive heart failure appear. From the first it has been confirmed that amyl nitrite and trinitrin have little or no effect in allaying the pain, and taking into account the fall in blood pressure they are contraindicated. On the other hand trinitrin occasionally finds a place in the residual attacks of anginal pain which sometimes occur in the later weeks following the initial attack, and even while the patient is still confined to bed.

PROLONGED REST IN BED ESSENTIAL

It has always been a pleasure to me to find how deeply ingrained in the medical mind is the idea of six weeks as a minimum period for rest in bed for rheumatic fever. If medical wisdom insists on this rest as proper for an inflammation of the heart, it will surely not seem too much for an infarct of the heart. Therefore, comparable with the rest assigned in the standard treatment of rheumatic fever, we shall not err in fixing a minimum six weeks' rest in bed for a case of coronary thrombosis. Difficulties often arise in practice respecting the period in bed. The patient cannot visualize as we can the serious condition of his heart. When the pain subsides he may feel well again, and find it hard to accept our stringent advice to remain so long in bed. For this reason, and in keeping with the spirit of the times which advocates candour, I think we should explain to the patient, according to the measure of his understanding, a little about the nature of his "heart attack." I say heart attack because it is unjustifiable, where such issues are involved, to be a party to any policy of hoodwinking, or of allowing the attack to be regarded as anything else. If this frankness does not suffice, reference to a tiny clot in the heart muscle would not be out of place, though any detailed description is to be deprecated, for it presumes a knowledge the patient does not possess and would probably be misunderstood. The pleasantest reason to offer for this long confinement to bed is the need for rest to enable the heart to recover from the attack. To the friends, and to an obdurate patient, the other reason can be given, which is the fact of there being a real danger to life if the prescribed rest in bed with the requisite nursing is refused.

LENGTH OF CONVALESCENCE

When the patient does get up, it will be our further duty to advise as long a convalescence as he can afford, and this will often be longer than he thinks his circumstances

permit. A period of three months from the initial attack should elapse before he returns to his previous daily activities, and then only if they can be undertaken without any reminder of the pain or return of the pain on exertion. For those who are able, it is better still for them to arrange to abstain from work for six months. After the standard treatment of the attack itself there is ample opportunity for a medical man to prove his worth in individualizing treatment. The treatment of a disease may be impersonal, but the care of a patient must be personal. There is perhaps no occasion like the time following a coronary thrombosis for a patient to be advised to take stock of his position and to plan his future. Ambitions will often have to be relinquished and activities curtailed. In selected cases retirement will be an excellent solution of the difficulties so often inseparable from an active life.

Relation of Angina Pectoris to Coronary Thrombosis

Having outlined the clinical features of coronary thrombosis, I think this is an occasion to consider its relation to angina pectoris, for its recognition as a common occurrence may clarify our conception of angina pectoris, the parent disease.

The first great event in the history of painful heart disease was the description of angina pectoris in 1768 by Heberden, who then separated it from heart attacks characterized by dyspnoea. He drew attention to the suddenness and severity of the pain, and its dependence upon exertion or excitement, at least during the earlier stages. He knew well the special dangers to life angina presents, but he also asserted (what many forget) that often it continues many years without any injury to health apart from the liability to pain on exertion. Although he said it was of brief duration, he added that "in one or two persons the pain lasted some hours or even days," and "once only, the very first attack continued the whole night." Almost every writer on the subject since Heberden has also mentioned or described patients whose prolonged attacks can now be interpreted as coronary thrombosis. Clear examples are found in Parry's book on syncope anginosa in 1799, and in Mackenzie's book on angina pectoris in 1923. So it is evident that for more than a century the clinical picture handed down to us as angina pectoris has been a composite picture of angina pectoris of effort and coronary thrombosis. The latter was regarded as angina in a severe degree if it was recognized as angina at all.

The second discovery of importance was the relation of the disease to the coronary arteries, as claimed a little later by Jenner and by Parry. Later still the remedial value of vaso-dilators was discovered. Lauder Brunton in 1867 introduced amyl nitrite, and Murrell in 1879 introduced nitroglycerin (trinitrin). Apart from these advances there seems to have been little progress in our understanding of the disease until suspicions arose that a prolonged attack of anginal pain might signify a particular pathological event in the heart muscle—namely, a cardiac infarction. Isolated records show that a physician here and there knew that a coronary thrombosis might cause a prolonged attack of angina, even with recovery. It was Herrick who, in 1912, began to insist upon the ease of diagnosis, the frequency of the condition, and the frequent recovery. His contributions were reinforced by those of other physicians and by the use of the electrocardiograph. We owe a debt to America for elucidating what proves to be a considerable sector of the whole field of angina pectoris. The isolation of coronary thrombosis shows that direct clinical observations, coupled with post-mortem work, can still contribute effectually to medical progress when physicians are not subject to the domination of authority and tradition.

If we inquire into what had been done between Heberden's discovery of angina and the recognition of coronary thrombosis as a common clinical entity, we are struck by the bulky disquisitions upon the nature of angina and the rivalry of various hypotheses respecting its causation. It would be a relief to the profession if this protracted discussion on the precise meaning of angina pectoris (disease) and its root cause could be ended in agreement. Clinical progress has been delayed by a preoccupation with the unknown cause, and our terminology has been tangled by confusing angina (disease) with anginal pain (specific symptom). Moreover, the mystery has created an atmosphere dismal to the doctor and terrifying to the patient. The advent of coronary thrombosis seems to many of us to have settled the main issue, and to have established the coronary theory of angina and the machinery of anginal pain. During its introduction the features which distinguish it from ordinary angina pectoris have had to be emphasized. What now needs emphasis is the essential *unity* of angina pectoris and coronary thrombosis. We have seen that the traditional description of angina by our predecessors was based on a combination of both. There is no need to labour their close relation, for it is patent in every communication on coronary thrombosis. The same individuals may suffer from one, but they commonly suffer from both. A large proportion—some think one-half—of all victims of coronary thrombosis can furnish a history of anginal pain on exertion. Even more important to my mind is the fact that angina of effort is often conceived in a first attack of coronary thrombosis, and that in this way an ordinary angina of effort may originate in a coronary thrombosis which escaped notice. Realization of this fact may have a gratifying effect in treatment, for by earlier recognition of coronary thrombosis and meticulous care in its treatment, the supervention of angina of effort may sometimes be prevented or postponed.

Points of Similarity

In considering the clinical unity of angina of effort and coronary thrombosis we note their similar quality, site, and extension of pain, their frequent concurrence, and their common danger. More correctly the danger to an ordinary angina patient is chiefly his liability to coronary thrombosis. Surely such a close relation points to a similar pathological cause. In the derivation of each from a disease of the coronary arteries, angina of effort and coronary thrombosis have acquired a vascular identity. The term "angina pectoris" should still cover the whole disease compounded of angina of effort and coronary thrombosis, and any grade of anginal pain expressing any grade of coronary disease between them. Thus a general acceptance of the coronary theory will rationalize our conception of painful cardiac disease; though, if this common factor is established, there is still scope for research into the pathological physiology and into the finer tributaries of cardiac pain.

Admittedly there are still difficulties in this acceptance, but they are dwindling. In the majority of cases of angina of effort, coronary disease is found at necropsy. Of course, coronary disease is commonly found where there have been no symptoms, and coronary thrombosis may even proceed to cardiac failure without pain. It is admitted that in a few reported cases of angina of effort the coronary arteries have been found intact, but I think that even fewer will be reported when a more searching technique is employed, such as the radiography of hearts in which the coronary circulation has been shown in all

its ramifications by previous injection with an opaque emulsion. Changes in the quality of the blood supplied (as in anaemia) may occasion pain similar to that due to an inadequate quantity. Yet we need not now despair if difficulties baffle us, and the coronary theory will serve us well to comprehend the great majority of cases, even if we cannot explain every case and fit it into our category.

THE CAUSE OF ANGINAL PAIN

There is the further problem to which I have alluded—how anginal pain is evoked in the heart. Opinion is tending to the conclusion that it arises from localized spasm in the finer coronary branches. The idea of coronary spasm would quickly be suggested by the spasmodic nature of the pain (fleeting cause—fleeting pain), and its relation not only to exertion but to emotion and to cold. The amazing effect of vaso-dilators, an almost unique phenomenon in therapeutics, carries its significance. Bearing on this problem several communications have been made in the last two or three years which show that in ordinary brief attacks of angina, spontaneous or induced, temporary changes often occur in the electrocardiogram, and the changes, though slight, are similar in nature to those which are known to be characteristic of coronary thrombosis. If these observations are further confirmed, no one will venture to deny at any rate the cardiac origin of anginal pain. It will be hard to imagine what can produce so distinctive and temporary a change in the heart muscle so well as spasm in the finer branches of a localized arterial territory, a spasm resulting in an ischaemia which possibly rehearses the bigger drama of a coronary thrombosis with infarct.

TERMINOLOGICAL CONFUSION

In the course of a century certain misconceptions and faulty classifications have become attached to that clear picture seen by Heberden, and many terms can now be regarded as relics of a classically educated profession. To begin with, the terms "pseudo-angina" and "false angina" have been a nuisance. Must one repeat the valid criticism that there are no false anginas, only false diagnoses? There seems no justification for the terms "angina major" and "angina minor," or for primary and secondary angina. The patient with angina decubitus is one already subject to angina of effort who has become worse, so that he is now liable to attacks at rest and when lying down—nocturnal angina, if the attacks are at night when the patient is in bed. The status anginosus is usually no other than coronary thrombosis. Angina vasomotoria is too rare and complex to detain us now. It is not quite so easy to dismiss angina sine dolore, because a coronary thrombosis sometimes produces an attack of acute and even fatal heart failure without pain. Having accepted the fact, however, the phrase is redundant. In the original and different sense Gairdner introduced it in an attempt to express a "specially indefinable and indescribable sensation," "a painless angina found with every kind of cardiac lesion which ends in death (whether sudden or not) in varying proportions." This definition is, you will agree, sufficient to stamp it as a doubtful and unnecessary addition to medical terminology. Since the term "angor animi" (the sense of dying) was introduced, its prevalence and significance have been so much exaggerated that it figures even in the definitions of angina pectoris. Worse still, some older writers have elevated it into something which equals or even eclipses the pain, and which has diagnostic value accordingly. It is held to be a weird sense of impending dissolution, not merely a fear of it. If such psychic experiences do occur, they have also been related by patients suffering from diseases other than angina pectoris. Their origin is to be sought in the nature of the patient, and not in the nature of the disease. If it means no more than a sense of impending death, what could be more natural than for sensitive patients to feel it? The stronghold of life is directly attacked, and the patient may realize it—that is all. Surely there is nothing morbid or pathognomonic about that.

BETTER PROGNOSIS IN ANGINA PECTORIS

It is quite time for a reconsideration of our views on the prognosis of angina pectoris. It is seen how patients with its severest form, coronary thrombosis, may not only recover from the attack, but live in fair health, or even in good health, for months and years following it. If now we exclude coronary thrombosis, and also that other dangerous variety, syphilitic angina, we are left with the average patient, one subject to sternal pain on exertion—that is, angina of effort. This is just as certainly angina pectoris, and it connotes an uncertainty with regard to life; but the prognosis is far better than is commonly supposed. These patients—and they are not uncommon—usually live for years. Are these years to be darkened by dwelling on the possibility of sudden death? Coronary thrombosis has not taken the sting out of angina pectoris, but it has removed much of it.

Not only has the imminence of death in ordinary angina of effort been exaggerated, but I dare to say that even the severity of the pain in the average patient has been exaggerated. The horror of some cases of coronary thrombosis has coloured the brief attacks of angina to as dark a hue. Even those cases with as intense a pain as any in human experience, now that they are recognized for what they are, can be alleviated by the bold use of morphine. Let us take, however, an even commoner clinical case, no other than that chiefly seen by the eye of Heberden. A man begins to notice that on hurrying he has to slow down or stop because of pain at the sternum or across the chest. It is an unpleasant pain, but he may deny that it is severe. There is often a direct relation between its severity and the degree of effort, and the term "paroxysmal" is scarcely applicable. Such a man is to be pitied and treated, but nothing is gained by magnifying this into an awesome and terrible attack. The temperament and tastes of the patient will largely decide how far his life is rendered unhappy by this handicap. For years he often succeeds in dodging the pain or keeping it within bounds; yet there may be added sooner or later true paroxysms which are unavoidable and independent of exertion, and coronary thrombosis may eventually supervene. Another dogma about angina pectoris is its incurability, and it is incurable in so far as coronary sclerosis is the foundation of it. Yet in that the process may become stationary, or may be corrected in part by a collateral circulation, it is not unreasonable to expect occasionally long remissions in the symptoms; and they do occur. In fact, after a cardiac infarction it is sometimes found that with proper rest and restriction the patient may actually find himself able to do more without pain than he could before the attack.

Until our own house is set in order the public will continue to view angina with morbid apprehension. It has been inculcated by a century of medical fearfulness. The popular conception of angina pectoris is attached to the disease in its severer forms. The public do not know, and some of us have forgotten, that all degrees of severity are seen in this disease, as in many others. A brighter view is justified, though no view can be called exactly bright. My point is that patients with angina often find

life worth living, and that they will live longer than is commonly supposed.

Conclusions and Summary

By way of summary and to conclude: Angina pectoris is a serious disease of the heart which is manifested by pain across the chest or at the sternum, often extending into the arms, and which is due to deficient coronary circulation or imperfect blood supply. There are two main varieties, but their specific pain differs only in intensity, and their pathology has a common factor in myocardial ischaemia. When the pain is brief and depends on exertion, anginal pain is known as angina of effort, and arises from ischaemia due to localized arterial spasm. When an attack of anginal pain is unrelated to exertion and sufficiently prolonged, and complicated by the symptoms of infarction, it is known as coronary thrombosis, and arises from the resulting necrotic ischaemia. Between these two varieties all grades of angina pectoris are encountered, in the main depending on the severity and extent of the coronary disease and the effect on the myocardium—whether the ischaemia is transient (arterial spasm) or permanent (infarction). Cases of angina pectoris range from simple to severe, and present a similar pain (anginal) of varying intensity, and reveal at their source a vascular identity.

Angina of effort may be initiated, complicated, or terminated by coronary thrombosis. By this a simple angina (of effort) can be converted into a sort of compound or complicated angina (with shock, etc.). The correlation between anginal pain and vascular lesion is not exact, for the worst cases of angina of effort approximate to coronary thrombosis. Angina of effort is fairly inclusive of all cases of angina pectoris excluding coronary thrombosis, cases with spontaneous attacks of pain at rest being almost invariably subject to angina on exertion.

Too much stress has been laid upon the gravity of angina pectoris. It is inseparable from a risk of sudden death, but this may be deferred for years. In attacks of coronary thrombosis and in the severer grades of angina of effort the pain is extreme and the danger is great, but milder forms are common and often run a tolerable course. There is every gradation between mild angina of effort and severe coronary thrombosis, as there is every grade of coronary disease. Too much attention has been centred on the anginal death, and too little on the anginal life and its management.

IMPORTANCE OF VOCATIONAL GUIDANCE FOR PRESERVATION OF THE HEALTH OF THE INDUSTRIAL WORKER *

BY

ANGUS MACRAE, M.A., M.B.

There are no statistics which afford any exact indication of the number of human beings engaged in work definitely unsuited to their capacities. In America it has been estimated that approximately 50 per cent. of the working population are vocationally maladjusted, but this calculation, based solely on questionary reports from satisfied and dissatisfied workers, is for various reasons unreliable. In any case, it is certain that the problem of the misfit is one of considerable magnitude, and that there is great need for improved methods of advising young people on the choice of occupation. It is a problem with important economic and sociological aspects, but the present paper is limited to a discussion of unsuitable employment as it affects the individual industrial worker, and, more especially, as it affects his health. In these days there is a growing realization of the importance of mental factors in the causation of sickness; it is clear that the whole man—body and mind—must be taken into account in any discussion on employment and health.

VOCATIONAL GUIDANCE AND THE PHYSICIAN

In this country the part played at present by the medical profession in vocational guidance falls short of the ideal. In school the child is examined at infrequent intervals by the school medical officer, who as a rule is concerned merely with the treatment of physical defects. In some areas the rule is that the child must be examined within two years of leaving school; hence, in certain cases, the medical information available to the child's vocational advisers is approximately two years out of date. Moreover, although there are exceptions to the rule, this information is commonly, for the purpose of vocational guidance, altogether too meagre.

So far as the writer knows, neither the certifying factory surgeon nor the doctor employed by the large industrial firm can be said—with exceptions—to give guidance in any real sense of the word. These officials render a valuable service by rejecting candidates for work whose physical defects might make them a danger to themselves or to others. But to be rejected is not to be guided; and it is perhaps questionable whether all the rejections are necessary or desirable. It appears that in this country the industrial doctor often sets a uniform standard of physical efficiency for all entrants to the factory, no matter what variations exist in the physical requirements of the individual factory operations. Recent writers have protested against this practice, insisting that *adaptation* of the defective individual, not *elimination*, should be the aim.

> "The object of the physical examination is not to make the plant a haven of physically perfect specimens . . . strict exclusion is a selfish policy, which deprives the doctor of his best field for improvement."[1]

Further, the industrial doctor not only gives no positive guidance to those whom he rejects, but takes no part, as a rule, in the allocation of suitable work to those whom he accepts. This would seem to be a matter in which his services might be used to greater advantage.

PHYSICAL MISFITS

As to what proportion of the young people annually entering the ranks of industry succeed—despite the efforts of school and industrial medical services—in obtaining employment unsuited to their physical condition, one can only speculate. In an American investigation it was found that of 400 working boys and girls, not specially selected in any way, 49 per cent. had physical defects which were being generally aggravated by their occupation.[2] In this country a recent investigation of load-carrying among women in a number of different industries showed that there was a definite correspondence between the heaviness of the trade and the strength of the women employed, but the comment was made by the investigators that

> "in view of the relatively casual method used in the selection of women, the only probable explanation is that it is a case of the survival of the fittest";

and

> "no doubt the 'below par' young persons filter through to a level of work which is within their capacity, but at what cost to the individual one can only guess."[2]

* Paper read in opening a discussion in the Section of Public Health at the Centenary Meeting of the British Medical Association, London, 1932.

Of course the many researches recently undertaken in the fields of industrial medicine and industrial physiology and psychology have resulted in practical measures of great value in promoting the health of the workers. But in vocational guidance one is dealing, not with workers generally, but with individuals ; and, outside the so-called "dangerous trades," the individual appears to have received comparatively little attention. May not every trade be dangerous, or at least unhealthy for certain types? Improvements in methods and conditions of work will not suffice to make a man a good worker or a healthy worker if, physiologically, he is a square peg in a round hole.

It is with much diffidence that the writer, whose experience has been mainly psychological, attempts a discussion of the ways in which vocational guidance might possibly be improved on its medical side. Some general principles may, however, be suggested as a basis.

The Object of the Medical Examination

This should be the detection, not merely of physical deficiencies, but also of physical capacities. The doctor concerned with vocational guidance should strive, not only to prevent the aggravation, by unsuitable work, of existing defects, but also to promote, through suitable work, the full use and development of the individual's physical powers. In the words of Sir Henry Brackenbury,[4] "perfection of faculty," and not mere prevention of ill, should be the aim of the physician. In the absense of notable physical defects, the head teacher in the London area is instructed to enter the letters "N.O." ("no observations") in the medical section of the child's school-leaving form: in the form used by the officer of the juvenile employment exchange the word "normal" is entered. But is it not important to study both physical and mental variations within the normal—not to mention the desirability of diagnosing the supernormal? It is certainly easier to contraindicate than to suggest fitting occupations, and it is true that psychological considerations must often render the ideal physical adjustment impracticable. The boy, for example, whose remarkable acuity of vision fits him for the trade of the watchmaker may on other grounds be much better equipped for the work of the salesman. But the fact remains that only when the doctor endeavours to provide positive as well as negative guidance will his contribution to the study of this problem be as useful as it should be.

Estimation of Degree of Physical Capacity

Unfortunately, owing to the complexity of the matter, no great success has attended the many efforts that have been made to devise a simple method of assessing the general physical efficiency of the adolescent in a precise, objective way. But where tests and measurements fail clinical insight may achieve a reliable grading, both of general robustness and of particular physical conditions. To encourage the adoption of a standard practice the American Conference Board of Physicians in Industry has formulated a classification of defects, in which, for example, five degrees of hernia are defined, and three degrees of varicosity. As is pointed out in one of the publications of the National Industrial Conference Board,

> "a consideration of the findings based upon a common terminology furnishes the information necessary to determine the extent to which workers with particular defects can be employed, the occupations in which they can safely engage, and the effect of such occupations on their physical condition."[5]

In the present state of knowledge the doctor's judgement of occupational potentialities (especially at the difficult age of puberty) must often be of a tentative nature. Therefore an exact medical record of the child at the time of leaving school will greatly facilitate the task of checking that judgement and of determining whether the occupation followed is physically harmful.

As the medical authors of a French book[6] on vocational guidance have insisted, it is important to distinguish between absolute and merely relative contraindications. Valvular disease of the heart is an example of the one class, temporary albuminuria of the other. When curable conditions are discovered, the doctor must give advice on hygiene or treatment, and his occupational suggestions must be provisional. When physical defects are present, it may not be enough to warn the child against following occupations which may affect him adversely ; it may be possible in some cases to suggest work which would be beneficial.

Importance of Diathesis

In the absence of actual signs of disease, it may perhaps be important to advise against particular occupations such as would favour the diseases to which the child is predisposed. The old doctrine of diathesis has recently been unpopular as a result of advances in bacteriology, which have directed attention to the seed rather than to the soil. There now appears, however, to be a revival of interest in this subject, evidenced, for example, by inquiries such as those of Draper[7] into the constitutional and genetic aspects of disease. The study of the predisposition to particular diseases would appear to be an essential part of the vocational guidance doctor's work.

Contact with Parents and Lay Workers

It is desirable that the doctor should interview the parents for the purpose of gaining information about the child's past history and family antecedents, and of impressing on the parents the importance of following medical advice. Owing to the prestige of the profession in the popular mind, parents are more likely to regard medical advice seriously when given by the doctor than when passed on by a "psychologist" or "vocational counsellor." It may be desirable, to preserve professional secrecy, for the doctor to keep the details of his examination private and to communicate only general recommendations to his lay collaborators. This practice is adopted in a number of vocational guidance offices on the Continent.

Finally, the doctor must express the results of his examination in intelligible language, and in as helpful a manner as possible, to the persons, usually non-medical, who are responsible for guiding the child. Ideally, the doctor assisting in such work should be acquainted with the nature and conditions of all the local occupations, but if it is impossible for him to name specific jobs which he considers suitable or unsuitable on medical grounds, he can at least supply positive and negative indications in terms of general occupational conditions. This plan has been followed in the experimental work recently conducted in this country by the National Institute of Industrial Psychology,[8] and similar methods are employed in many Continental centres. There can be little doubt that the general use of such methods in vocational guidance would materially reduce the number of mistaken occupational choices due to lack of exact medical information or to misinterpretation of such medical information as is available.

When large numbers of children must be examined in a comparatively limited time, it is impossible to employ elaborate laboratory methods. It may be worth mentioning here, however, that the French authors quoted above have emphasized the great value of radiography as a means of confirming doubtful diagnoses.

PSYCHOLOGICAL INVESTIGATION

Sometimes one discovers, in record forms used in medical examinations, a minute space for the doctor's observations on the subject's "mental condition." Fortunately, the psychologist has now developed methods for obtaining a more comprehensive and exact estimate of mental factors than can be achieved in the course of a clinical examination. These are of two kinds: there is the method of standardized tests for the assessment of abilities, and that of the systematic interview for assessing temperament and character.

The mental testing movement, which had made considerable progress before the war, received a great impetus from the successful American experiment of applying psychological tests to nearly two million Army recruits during the war. In recent years these tests have been widely used in various fields of applied psychology and, in particular, in the vocational guidance of children leaving school. Much of the early testing was empirical and somewhat uncritical, but the best tests now in use, although certainly not infallible, are instruments of considerable scientific precision. It is impossible here to go fully into theoretical and practical details. A brief account of the matter must suffice.

INTELLIGENCE TESTS

The tests most widely used are those which measure intelligence, or "inborn general mental ability." These, although verbal in form, differ markedly from a scholastic examination. They call for natural ability rather than for acquired knowledge or skill. They are scored in an objective way, the personal bias of the examiner being eliminated. They usually involve little, if any, writing, so that the child who lacks facility of expression is not placed at a disadvantage. They are carefully standardized by application to large numbers of children of different ages. With the aid of modern statistical methods, norms are worked out in such a way as to make possible an exact estimation of the position of any particular individual among individuals of his own age and experience. Intelligence tests are often unfairly criticized. The psychologist understands their limitations, and knows that he must often interpret the results cautiously. But competent judges are agreed that general mental ability, subjective estimates of which are notoriously unreliable, can be much more accurately gauged by these tests than by any other method.

TESTS FOR SPECIAL ABILITY

Vocational maladjustment is often due simply to an excess or a defect of intelligence; the requirements of the job are far above or far below the individual's general capacity. In many other cases, however, the trouble is due to the lack of a special mental aptitude which the work demands, or to the possession of a specialized gift which the worker longs to use and for which his job provides no exercise. The testing of special abilities is still, for the most part, somewhat inexact, but the scientific procedures which have established the validity of the intelligence test can be, and are now being, applied in this field also. For a model investigation of a special ability the interested reader may be referred to the recent work of Cox on mechanical aptitude.[9] Among such tests as have been used in recent experiments in this country may be mentioned those for "practical ability" (non-verbal problems, calling for practical planning with concrete materials), for mechanical aptitude, for form perception and visualization, and those for speed, steadiness, and precision in performing different manual movements. Standardized educational tests are also employed when a more exact estimate is required of proficiency in particular school subjects than may easily be obtained from the teacher.

ESTIMATION OF TEMPERAMENT AND CHARACTER

An interesting example of temperamental maladjustment is given by Dr. May Smith. Dr. Smith studied the "output" of three girls engaged in the sorting of soiled linen in the laundry trade, and observed that two of the girls, who were sisters, worked much more quickly than did the third. Further investigation showed that the difference in speed was not due entirely to a difference in natural quickness. The facial contortions of the slow girl at the sight of an unusually dirty article, and the extreme care with which she handled it, made it clear that the emotion of disgust was an important contributory cause of her slowness.[10]

There have been many unsuccessful attempts to devise reliable tests for temperamental and moral characteristics. Recently Culpin and Smith[11] have found the McDougall-Schuster dotting test of considerable value in the diagnosis of a particular type of temperamental peculiarity; Pinard (whose work is as yet unpublished) has obtained promising results in an investigation of perseveration tests as indicative of general emotional stability; and Farmer and Chambers[12] have made a useful beginning with the testing of the personal qualities thought to be important in the causation of industrial accidents. For the most part, however, the psychologist engaged in vocational guidance bases his estimates of temperament on his observations during a systematic interview. Burt[13] has shown that the trained psychologist, in a carefully planned and directed interview of quite short duration, can estimate with a surprising degree of accuracy the simpler temperamental tendencies, such as sociability, sympathy, cheerfulness, assertiveness, and timidity. The more complex qualities, such as industry, honesty, and reliability, are not so easily assessed, and here especially the psychologist seeks the assistance of the child's teachers and parents. From the parents he obtains also information about special family characteristics and occupational traditions. As in the medical, so in the temperamental, examination the family history often gives great assistance.

THE ENVIRONMENTAL FACTOR

The investigation of environmental conditions is especially important when temperamental deficiencies are present. In such cases the test results may sometimes shed light on the causation of the abnormality.

The vocational adviser must have some skill in detecting the minor discords in the emotional life of the adolescent. If not an expert psychiatrist, he must at least have the psychiatric outlook and must be prepared to offer advice on mental hygiene. In cases of marked temperamental abnormality the wise adviser will reserve judgement on the vocational question until it is seen what improvement can be effected by psychotherapy. Sometimes it may be possible, as in the case of physical defects, to suggest an occupation which will have a remedial influence—for example, by affording an outlet for natural impulses which have been unhealthily repressed, or which have tended to find expression in undesirable ways.

It is unnecessary to stress the dangers to mental health of work which is ill adapted to the worker's mental capacities or to his temperament. The mental strain resulting from uncongenial employment may in extreme cases—which are perhaps more numerous than is commonly realized—be a contributory cause of such grave conditions as alcoholism and insanity. Burt[14] has found a definite relation between occupational maladjustment and juvenile delinquency, and Henderson and Gillespie[15] have recently drawn attention to the importance of wise vocational guidance in the prevention of mental disorders, particularly the common disorders of the schizophrenic type. Moreover, the mental conflicts of the misfit, which are often aggravated by economic stress—for maladjustment may well affect earning capacity—cannot fail to react adversely on his physical condition; and in certain cases serious disablement may be produced. Nearly thirty years ago Janet,[16] recognizing the psychological origin of some of the so-called "occupational neuroses," placed a writer with cramp in the same general category as a barber with a phobia for razors. Recent investigations of telegraphists' cramp have led to the conclusion that this condition is a symptom of a psychoneurotic disorder, and is designed to rescue the patient from uncongenial occupational conditions which have aggravated his temperamental peculiarities. Some at least of the sufferers, if they had

chosen a less exacting occupation, might have worked happily and efficiently.[17]

It is obvious that, to prevent such maladjustments, the vocational adviser must not only know the individual characteristics of the child but must investigate the special requirements of the occupations. Progress is being made in this latter direction, but much research remains to be done. It is work in which the doctor would seem to have an important part to play.

The method of formulating the vocational advice is not, and never will be, very exact. Vocational guidance will always remain an art rather than a science. The adviser soon discovers what has recently been called "the fallacy of the perfect niche." Usually there is no one occupation for which the individual is in all respects ideally fitted; and, when there is an ideal, the child is often unable for economic reasons to pursue it. Very often some sort of compromise is necessary. The aim is to survey carefully all the relevant data (the results of the special psychological inquiry being merely supplementary), and to assist the child towards a balanced judgement, so that his choice of work may be more rational and less haphazard than it might otherwise have been.

PSYCHOLOGICAL METHODS OF VOCATIONAL GUIDANCE

These, sometimes with and sometimes without medical collaboration, are now being practised in many countries, but there is an unfortunate dearth of published results such as might indicate the value of the procedures employed. In this country the National Institute of Industrial Psychology has made strenuous efforts to check the validity of its methods by "following up" the children examined and advised. There has recently been published an account of an extensive experiment which the Institute conducted some years ago among elementary school children in London.[18] Six hundred children were advised and were followed up in their occupations, the follow-up survey including also a control group of six hundred who did not receive the psychologist's advice. The results, which have been confirmed by those of a more recent investigation conducted by the Birmingham Education Committee in collaboration with the Institute,[19] clearly demonstrate the superiority of the psychological methods to those ordinarily used.

THE PERSONNEL IN TEAM WORK

There can be little doubt that the near future will see a widespread extension of these newer methods. How best to apply them on a national scale is a debatable question. It has been suggested that the psychological examination might be undertaken in the schools by specially trained teachers, supervised by an expert psychologist, who would be responsible for the direction of the work in a given area. Possibly the plan favoured on the Continent is the preferable one: here the work is commonly carried out by doctors and psychologists working together in a municipal vocational guidance office, close contact being maintained with the school staffs (and, in particular, the school medical officer) on the one hand, and with the local employers on the other. Certainly the doctor has an indispensable part to play, and the question of how he can most effectively contribute to the success of future plans of vocational guidance in this country would seem to be one which deserves the serious consideration of the medical profession.

The suggestion has been made that the general practitioner might undertake the work of vocational guidance.[20] That scarcely seems the ideal solution; the general practitioner usually lacks the time for such work, he lacks the training, and he may lack the temperament. Again, it is sometimes suggested that vocational guidance is essentially work for the psychiatrist, and there is much to be said in favour of that view.[21] On the other hand, it is often objected that the psychiatrist, even more than most specialists, tends to see things through distorted lenses; and it is certain that, to carry out the whole work of vocational guidance, he would require to be much more than a psychiatrist. Probably the team method is the ideal—doctor, psychologist, teacher, employer, parent, and child each playing his important part. Psychiatric assistance is most desirable, and, ideally, there should be a panel of medical and surgical consultants to whom children could be referred for special diagnoses. Certain special ear conditions, for example, may have an important vocational significance, particularly in relation to trades in which the worker is subjected to much noise.[22]

CONCLUSION

Some general principles, which probably few persons would care to dispute, must be stated very briefly.

First, guidance for work should be supplemented by guidance for leisure, both because the psychological limitations of the job must often create a serious need for compensatory spare-time activities, and because the physical adjustment to the work must be affected by the manner in which the worker spends his energies outside the factory. The attendance of the parent at the vocational adviser's office would seem to afford an excellent opportunity for important measures of health education.

Secondly, it is of little use to give advice once. The child may not follow the advice (compulsion is, of course, out of the question), and the advice, when followed, will sometimes prove to have been ill founded. Some supervision of the juvenile worker is most desirable in order to facilitate the difficult process of adjustment to new conditions, to supply fresh advice when required, and to obtain, from the young worker's experiences, information which will be of service in testing and improving the methods of guidance employed. As Anderson[23] has shown, faulty work may not be due to any fundamental unsuitability on the part of the worker, and may call, not for a change of occupation, but for advice on personal troubles, the strain of which would render the worker inefficient in any occupation.

Thirdly, considerations of time prohibit the use in vocational guidance of tests other than those of a very general nature. In certain cases special tests should be applied at the place of work before the worker is engaged. This is commonly called "vocational selection," and it is an important supplement to vocational guidance. Two examples may be mentioned. A test of memory for numbers is desirable for prospective telephone operators, and tests of "idiosyncrasy," such as those used by Bloch[24] in the dermatological clinic in Zürich, might usefully be applied in factories where the work involves the handling of eczematogenous substances.

Fourthly, it may be important to advise older workers, especially those who have suffered serious accidents of injury and disease which cannot be foreseen at the adolescent stage. Indeed, vocational guidance should be a life-long service. A doctor recently reported to the writer the case of a man with myocarditis and bronchitis whose job consists in carrying heavy carpets about in a big store. As the doctor remarked: "The exertion doesn't help his heart and the carpet dust doesn't improve his lungs."

Finally, unhappiness and ill-health at work may be due to the fact that the employer or supervisor, not the worker himself, is a misfit. Vocational guidance must not be confined to the children of the labouring classes. In this country a limited amount of work has already been done in the guidance of public and secondary school pupils, with results which are distinctly promising.[25] An extension of this work is greatly to be desired.

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Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

AURAL BACTERIAEMIA TREATED BY ORGANIC ARSENIC

As this case is recorded to show the therapeutic effect of organic arsenic in blood poisoning by *Streptococcus haemolyticus*, the reasons for the various operative procedures are not mentioned; they belong more to the field of the aural surgeon. For instance, the lateral sinus was opened on the fourteenth day after the Schwartze operation chiefly because the unsatisfactory temperature chart in the interval, culminating in a rigor, combined with the forward position of the sinus, inclined one to think that a subsequent thrombosis was possible.

The boy, aged 8, was a private patient of Dr. Helen Ewart. I was first asked to see him on January 9th, 1932. He had complained of severe pain in the right ear for two days. The tympanic membrane was bulging, and paracentesis was done the same day. The left ear was not affected. The boy had not been well since an attack of influenza early in December, 1931. All the rest of the family, six in number, had been similarly attacked at that time.

On January 21st Schwartze's operation was performed. The usual appearances of early mastoid disease were found. The lateral sinus was exceptionally well forward, and actually overlapped the posterior third of the antrum. The wall of the sinus, although healthy, must have been subjected to considerable pressure during the necessary process of opening up the antrum. On February 5th the lateral sinus was opened. It bled freely from both ends, torcular and bulb, and there was no visible thrombosis. On February 11th a specimen of blood was taken for culture. Dr. Smith of Preston reported a pure culture of *Streptococcus haemolyticus*.

Dating the commencement of his illness from the paracentesis, the position at the end of the fifth week and in the interval may be described as follows. During the whole time the temperature had ranged chiefly from 100° to 103° F. Only one rigor had occurred—namely, the day before the sinus operation. The pulse had not risen over 100. The boy did not look critically ill, and one hoped that things would settle down gradually. The treatment was chiefly symptomatic, with the addition of scarlatinal anti-streptococcic serum at intervals. The serum treatment did not seem to do much good—in fact, on the whole, it seemed to weaken the patient. On February 17th he was much worse; the pulse rose to 140, and he looked as if he was going the wrong way. At this stage Dr. G. E. Loveday of Manchester was called in consultation, and the following is an extract from his notes, which he has kindly allowed me to publish:

"First seen on February 18th, 1932. Temperature swinging to 102° F., pulse 126. History of positive blood culture, *Streptococcus longus*; 0.05 gram novarsenobillon given intravenously, after blood had been withdrawn for culture, etc. Blood culture, February 18th: positive haemolytic *Streptococcus longus*; number of colonies per c.cm. uncountable—probably in the neighbourhood of 1,000 per c.cm. Phagocytic efficiency of whole blood, February 18th, 0.78. 0.1 gram of metarsenobillon was given intramuscularly on the morning of February 19th, the evening of February 19th, and the morning of February 20th. That afternoon (February 20th) the boy was seen by me and was distinctly better. Blood taken for culture was sterile. On February 23rd 0.1 gram metarsenobillon was given. The temperature rose rather higher after this, and the boy had some albumin in the urine. In consequence of this, and also to prevent the development of an anaphylactic state, scarlet fever antitoxin was given on February 24th, and also on February 25th. These doses of antitoxin appeared to have no beneficial effect, so on February 27th another dose of 0.1 gram metarsenobillon was given. Thereafter he made steady progress, and I believe no more metarsenobillon was given.

"The striking features in this case are the sterility of the blood forty-eight hours after an extremely heavy blood infection was found, the recovery from an infection of the blood with streptococcus which was so heavy that I should have considered recovery impossible from my previous experience, and the high phagocytic efficiency of the blood in the presence of a heavy infection."

After February 27th the temperature and pulse fell to normal, and remained so. Convalescence was uninterrupted. The mastoid wound and drum perforation healed in the usual way, with full hearing.

REMARKS

Most aural surgeons will, I think, agree that the majority of these cases of aural bacteriaemia tend to recover after several weeks of illness. During this period those in charge have a most anxious time. It is perhaps more difficult to avoid interfering too much with the natural resistive powers of the patient than it is to inject various drugs and serums. In fact, where active drug treatment has been pursued and the patient recovers, one cannot help feeling sometimes that the patient has recovered despite the active drug treatment. This boy, however, on February 17th was desperately ill, and was obviously going downhill. The marked improvement in the well-being of the patient within forty-eight hours of Dr. Loveday's treatment, combined with the absence of organisms in the blood at the end of that time, left no doubt in our minds as to what decided the issue.

Recent experimental work on this subject by Colebrook[1] is well worth perusal. He indicates the type of streptococcus which is most vulnerable to organic arsenic, the type of infection in which this treatment is likely to be successful, the variety of arsenical preparations which are most suitable, and whether the injections should be given intravenously or intramuscularly. Incidentally, this boy had had the tonsils and adenoids thoroughly removed three years previously. I am afraid one sees in recent years not a few similar cases—namely, serious ear infections in patients who have had tonsils and adenoids removed previously.

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Reviews

FISHBERG'S PULMONARY TUBERCULOSIS

The last ten years have seen many changes in our views on the pathogenesis and treatment of pulmonary tuberculosis, and it is therefore with interest that we have received a new edition—the fourth—of Dr. FISHBERG'S *Pulmonary Tuberculosis*.[1] The third edition was published in 1922, and the fact that the fourth is in two volumes, and has approximately twice the page content, is a witness to the amount of fresh material that this comprehensive work has to review. Since the fourth edition contains, in addition to much new work, all the material of the previous ones, and since the scope and value of Dr. Fishberg's book are so well known to the profession, a critique of the whole work is unnecessary, but it may be well to spend a little time in examining the reaction of so experienced a physician to the trend of modern tuberculosis work. This is indeed necessary, for it must be recognized that, in spite of its size, the work is not purely a book of reference, but rather a teaching textbook in which the author's views, especially when they are at variance with other opinions, are stated clearly and often in forcible language, and in which he has a tendency to stress the evidence supporting his own views and to ignore that which may be contradictory. For a teaching textbook this is without question the right method to use. But as a textbook it must be criticized on one point—to wit, "balance." A teaching book should present its subject comprehensively balanced, underlining and enlarging upon its important aspects and framework, and keeping the less practical and academic parts somewhat in the background; for the student coming fresh to his subject lacks a sense of perspective, and must have his approach to it, and his point of view, chosen for him. But here we have a book set out in the manner of a book of reference, in which each aspect of the subject is given equal treatment without clear indication of its relative importance to the main structure; a book in which the expert can find and appraise what he wants to, but in which the inexperienced may fail to see the wood for the trees.

With this one criticism behind us we can turn with interest to the new subject-matter. Modern views on pathogenesis are most admirably handled; the work of Assmann, Redeker, and Lydtin on the early infiltration, its appearance and behaviour, is carefully analysed, and their pathological point of view is amplified by the author's own clinical research on the same subject, the theme of his recent address on apical and subapical types of pulmonary tuberculosis being fully developed. His exposition and practical adaptation of Ranke's hypothesis is particularly pleasing in its clearness. This part of the book deserves the highest praise. Dr. Fishberg's views on the importance of infection in adult phthisis are well known, and ten years' further experience has not altered them. It is in a vexed question such as this that the student will be well advised to require the evidence of opposing schools of thought before he makes his final judgement. The study of phthisis among primitive races, including the work of Ferguson, Lyle Cummins, Opie, and many others, is given full prominence, and here again the author is well qualified to marshal the discussion, for in a rather more limited manner he has made a very close clinical study of the reaction of different ethnological types to tuberculosis.

Turning to treatment, we find, as in previous editions, the same valuable insistence on individualization, but also a definitely reactionary tendency. Some of the older drug treatments retain a surprising popularity, while chemotherapy, and especially sanocrysin, does not meet with any approval; here again a little more evidence from European sources would do no harm. The section on artificial pneumothorax is very full, but the author cannot find much to say in favour of those adjuncts to collapse therapy, cauterization of adhesions and oleothorax; he insists that their sphere of action is very limited. Thoracoplastic and surgical treatment in general is given generous space, but running through the section there is a vein of scepticism which comes to the surface occasionally as trenchant and epigrammatic notes of warning. This is salutary and gives good balance, since the indications for and use of surgical treatment are set out at sufficient length. B.C.G. is discussed in all its aspects, and here the author's views reflect the transatlantic attitude, which is, on the whole, antagonistic. The use of lipiodol in cases of pulmonary tuberculosis is definitely condemned.

Dr. Fishberg is to be congratulated; it is a great work, and even those teachers who do not agree with all his views can still recommend it to those of their students who can afford seventy shillings for a textbook.

SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS

The treatment of pulmonary tuberculosis has been considerably modified since the active method of pulmonary collapse by artificial pneumothorax was popularized by Forlanini. Recognition of its limitations due to localized or generalized pleural adhesions has resulted in more recent years in a great extension of the indications for other forms of surgical collapse. Perusal of the vast literature on this subject which has accumulated in the last ten or twelve years is quite enough justification for the publication of a book largely summarizing the most useful portions of this literature. Professors CHARRIER and LOUBAT, in their volume on the Surgical Treatment of Pulmonary Tuberculosis,[2] have selected wisely from this mass of material. No attempt is made to consider artificial pneumothorax as such, but rather to discuss the various alternatives that may be adopted when this form of treatment has completely or partially failed of its object.

There are three main sections, in which phrenic evulsion, pneumolysis of different types, and thoracoplasty, partial or complete, are dealt with respectively. A full description is given of the indications and the technique of various operations, and a good idea is afforded of the results which may be obtained in suitable cases by such measures. There are very few points to be criticized, but, although no one could fail to appreciate the effects of expert anaesthesia on the results of operations such as thoracoplasty, it is surely an exaggeration to give the whole of the credit to the anaesthetist, as is done on pages 274 and 279, recording the figures of English results. With regard to extrapleural pneumolysis, the description of this operation through the axilla is somewhat brief, and, rather unjustifiably, the measure is dismissed as of little value. The anterior approach is described in far greater detail, and is apparently much more practised by the French school. Thoracoplasty secures very full mention, but the operation through a lateral incision devised by Duval and his co-workers would hardly appear, by its inadequate results, as shown in the

[1] *Pulmonary Tuberculosis.* By Maurice Fishberg, M.D. Vols. i and ii. Fourth edition, thoroughly revised. London: H. Kimpton. 1932. (Vol. i, pp. xvi + 567; 138 figures, 8 plates. Vol. ii, pp. xiv + 624; 94 figures. The two volumes, 70s. net.)

[2] *Traitement Chirurgical de la Tuberculose Pulmonaire.* Par A. Charrier et E. Loubat. Paris: Masson et Cie. 1932. (Pp. ix + 366; 168 figures. 65 fr.)

skiagrams, to justify such full description. The localized apical thoracoplasties through the supraclavicular approach are very fully discussed, but the end-results of these localized procedures are not indicated and (as the authors themselves state) several of them do not appear to be justifiable. A special chapter is devoted to the surgical treatment of the pleural complications, the teaching being adequate and on the lines now generally accepted.

The book as a whole can be recommended as a reasoned account of the present position of surgery in relation to the treatment of pulmonary tuberculosis, and as such may be read with enjoyment and profit by those interested in this disease both from its medical and from its surgical aspects. A considerable number of figures of operative procedures and of skiagrams of cases are included, and these are well produced.

PUERPERAL INFECTION

In *Puerperal Infection*[3] Professor J. R. GOODALL presents the substance of the lectures on this subject which he gives to the final-year students of the McGill University. The style is that of the lecture theatre, with the result that the book not only is easy to read, but can be followed with enjoyment; it compares very favourably with the stilted precision of the average medical publication of the present day. With all books of this kind the personal opinions of the author are necessarily to the fore, and there is a risk of offending the convictions of other people unless the quality is of the very best. Professor Goodall writes with experience and authority, and although minor criticisms can readily be made, the general atmosphere he creates deserves the highest praise. The monograph can be strongly recommended to final-year students of this country. They will find all the features of this most important subject presented to them in a manner which should demand little concentration, and, above all, the views expressed are the manifestation of a wide clinical experience and ripe judgement.

MEDICINE AMONG THE AMERICAN INDIANS

The series of handbooks known as "Clio Medica" purports to present different phases of medical history and science in a concise and readable form. They will appeal mainly to the intelligent reader of wide interests. Limitations of space have prevented Dr. ERIC STONE from making the most of his material, and consequently *Medicine among the American Indians*[4] is a disappointing book, which has, however, the merit of including a useful bibliography. Its genesis is interesting, and also serves to explain some of its defects. For Dr. Stone tells us that he formerly shared in the universal misapprehensions concerning Indian culture, and that it was only an accidental visit to the Field Museum in Chicago which opened his eyes to the superficiality of the accepted attitude of disdain. Their crafts and mythology fired his imagination and induced him to read and to study their material culture, and this led him, naturally enough, to look for contacts in his own special sphere of scientific interest. The result is that we are given a fairly wide insight into Indian principles of therapeutics, but the details are insufficiently fitted into the framework of anthropological theory. The author has no real conception of what is meant by magic or by primitive notions concerning spiritual and material causation. The part that *manitou* or *orenda* or *wakan* plays in Indian belief and practice is as important as their attitude towards the diagnosable symptoms of ill-health, and what is an apparent confusion to us comprises two separate volumes in their pharmacopoeia, and though in practice they may dip into both volumes concurrently they do so with a full realization of their disparate significance. Such a chapter heading, therefore, as "Legitimate Therapeutics" approaches the subject from a wrong angle, as all therapeutics, whether physical or psychical, are legitimate, and a complete cure demands the interaction of the two principles. A minor, though to many an important, criticism may be directed against a vagueness which is doubtless due to the material at Dr. Stone's disposal. We are frequently not told the disease or condition which a particular treatment is designed to remedy, or the result of the treatment. Despite these strictures, nevertheless, the volume is a useful addition to the series and should appeal to the general reader and stimulate him to further reading, which is perhaps its most desirable function.

HUMAN STERILIZATION

One of the best and most valuable books on its subject comes to us in *Human Sterilization*,[5] by Dr. J. H. LANDMAN of the College of the City of New York. Its purpose and point of view may be made clear by three short quotations from its early pages:

> "This book deals with the process of human sterilization as a means of restricting the multiplication of our socially inadequate people. . . . Our study is primarily concerned with the relative merits and demerits of segregation over against sterilization as social therapeutic agents. . . . This book is not designed as propaganda either for or against the programme of human sterilization. It purports to be a scientific treatment of the available data. The conclusions are not final, but suggestive. What the question of cacogenicity, which is the crux of the problem of human sterilization, requires is more science than propaganda, and more research than speculation."

The author's written words are throughout consistent with the purpose thus set out. The arrangement of the book is admirable. It is divided into five parts, each of which covers a distinct aspect of the subject. Within the parts each chapter contributes specifically and in sequence to the aspect under discussion. Thus, though the volume is intended primarily for American readers, and has reference definitely only to American laws and statistics, it is easy to pick out and consult those pages which are concerned more generally with any point with which a reader is immediately interested and avoid what is for the moment irrelevant. The author says many wise things, and says them in a clear and attractive style. He points out several important things that are often forgotten by controversialists in this field. To begin with, it is necessary to discover what is the nature of the ideal society at which we aim, and who shall design it. Just whom shall we sterilize? Even if we were agreed upon the people who were socially inadequate, to sterilize them all, even if possible, would be futile. The process could, with effect, be applied only to those who had inherited their defects and may transmit them to offspring. So, even if we admit that the defects in certain classes of persons are of this kind, it is necessary to make the diagnosis in the case of each individual, and our knowledge of genetics is as yet too imperfect to allow of this. Pedigrees themselves may mislead us.

> "It requires a skilled eugenist to study and interpret a pedigree. . . . The primary error that psychologists and

[3] *Puerperal Infection.* By James Robert Goodall, O.B.E., B.A., M.D. Toronto: The Murray Printing Company, Ltd. 1932. (Pp. vii + 189. Illustrated.)

[4] *Medicine among the American Indians.* By Eric Stone, M.D. Clio Medica. A series of primers on the History of Medicine, VII. Editor: E. B. Krumbhaar, M.D. New York: Paul B. Hoeber, Inc. 1932. (Pp. xv + 139; 16 figures. 1.50 dollars.)

[5] *Human Sterilization. The History of the Sexual Sterilization Movement.* By J. H. Landman, Ph.D., J.D., J.S.D. New York: The Macmillan Company; London: Macmillan and Co., Ltd. 1932. (Pp. xviii + 341. 16s. net.)

educationalists make is that they confound a mental trait with a Mendelian unit character. . . . We have no definite biologic standards for determining whether the undesirable attributes of an individual are hereditary or acquired. We know as yet of no immutable laws of inheritance of human characteristics. . . . Human sterilization is not by any means the solution of the problem of the feeble-minded or the mentally diseased. Instead, it creates new problems."

The sections in which Dr. Landman enlarges upon these and many other similar statements are of extreme interest; and in particular there is a passage on pages 267 and 268—unfortunately too long for quotation—which should be brought to the notice of every physician, social worker, legislator, administrator, or scientific eugenist before he makes any pronouncement on the question with which it deals—namely, "Institutionalization *versus* sterilization." Though they are quite different in character, we should couple this book with Lancelot Hogben's recent volume on *Genetic Principles in Medicine and Social Science* as perhaps the two most useful publications on the general subject of eugenics in relation to biology and social procedure.

NOTES ON BOOKS

Addresses for the occasion usually perish with the occasion, and not even their authors desire for them a prolonged existence. Now and again, however, the speaker attempts both a wider audience and a more enduring fame, and the event may or may not justify his ambition. It is to this trial that Dr. E. G. DRU DRURY comes with his *Choosing a Wife and other Essays*,[6] and for our own part we cordially welcome his decision, as we find in his pages much sensible thinking and literary charm. Doubtless a few of the topics discussed relate to South Africa rather than to Great Britain, but in the majority of instances the appeal is universal, and may well be listened to by all those interested in medicine, in literature, and in life. Dr. Drury looks with his own eyes, and leans to an independent judgement; he has the gift of the happy phrase and the sense of what is appealing and emotional in human affairs. Many of his illustrations are too technical for the layman, and it cannot be said that his book is light reading. Indeed, it asks decidedly for careful reading; however, to those who grant this request it promises both interest and refreshment, and it may well number among its triumphs permanent impressions on the minds of those who find new points of view in its pages.

All who are engaged in health and social work will welcome the new and revised edition of the *Directory of District Nursing and Streets List for London*, issued by the Central Council for District Nursing in London. It lists the names of some 20,000 streets and places in the administrative county, together with their locality, postal district, and borough. A number or letter in bold type indicates (by reference to the index inside the back page of the cover) the name and address of the district nursing association or parish nurse working in any particular street. Copies of the Directory may be obtained from the offices of the council, 12, Whitehall, S.W.1 (4s. 4d. post free).

The first volume of the forty-second series of *International Clinics*[7] is divided into three parts, the first containing clinical papers of medical, surgical, orthopaedic, and dental interest by various well-known American authorities, the second consisting of reviews of recent progress in medicine, treatment, and paediatrics, and the third being the account of a new method for microscopical study of cells and tissues in the living mammal. Among the papers in the second part attention may be drawn to those on hyperinsulinism and dysinsulinism, by Seale Harris of Birmingham, Alabama; spontaneous rupture of the heart with electrocardiographic studies, by Harold L. Stewart of Philadelphia; so-called idiopathic choledochus cyst, with a review of the literature, by J. H. Clark of Philadelphia; non-operative treatment of pelvic pain in women, by Walter T. Dannreuter of New York; and the modern treatment of digestive diseases, by J. Friedenwald and T. H. Morrison of Baltimore.

An authoritative medical directory is rendered increasingly necessary by the growth of the profession in India. *Thacker's Indian Medical Directory*[8] supplies lists covering not only private practitioners and members of the Indian Medical Service and Indian Medical Department, and Royal Army Medical Corps throughout India and the Native States, but also dentists and dental surgeons, hospitals, chemists and druggists, Queen Alexandra's Military Nursing Service for India, nurses, midwives, and medical missions. It is to be hoped that it will soon be found possible to publish this useful handbook annually.

The Text-Book of Massage and Remedial Gymnastics,[9] by Miss LOUISA DESPARD of Dublin, has now reached a third edition. The chapters dealing with the treatment of sprains, dislocations, fractures, and of paralysis have been largely rewritten, and there is now a new chapter on the re-education of muscles. Further additions are two chapters by Miss Hester Angrove, sister-in-charge of Guy's Hospital massage department, on the treatment by massage and exercises of diseases of the respiratory organs and of the cardiovascular system.

[6] *Choosing a Wife and other Essays*. By E. G. Dru Drury, M.D., B.S. London: H. K. Lewis and Co., Ltd. 1932. (Pp. viii + 276; 6 plates. 8s. 6d. net.)

[7] *International Clinics*. Edited by Henry W. Cattell, M.D. Vol. i. Forty-second series. Philadelphia and London: J. B. Lippincott Company. 1932. (Pp. viii + 307; illustrated. £2 10s. set of 4 vols., 12s. 6d. per vol.)

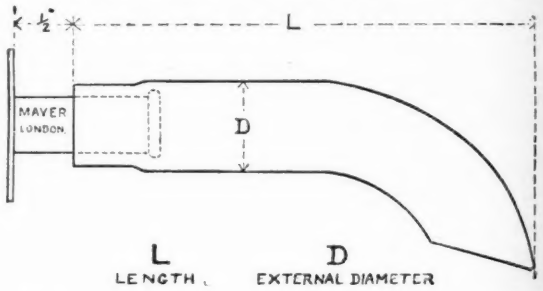
[8] *Thacker's Indian Medical Directory*. Eighth edition, 1931. Calcutta: Thacker's Press and Directory, Ltd.; London: W. Thacker and Co. (Pp. 530; 9s.)

[9] *Text-Book of Massage and Remedial Gymnastics*. By L. L. Despard. With two chapters contributed by Hester S. Angrove. Third edition. London: Milford, Oxford University Press. 1932. (Pp. xxiv + 474; 222 figures. 22s. 6d. net.)

PREPARATIONS AND APPLIANCES

STANDARD AIRWAYS FOR OPEN ETHER

Dr. F. F. WADDY (Northampton) writes: For some years I have used Phillips's airways in the vast majority of cases to which I have administered open ether. I have found the utmost difficulty in getting airways of the size ordered. The instrument makers classify them as medium, small, and large, and these vary from maker to maker and from time to time.



	L LENGTH	D EXTERNAL DIAMETER
No 1	2½ INCHES	½ INCH
" 2	3 "	⅝ "
" 3	3½ "	⅝ "
" 4	3½ "	¾ "
" 5	4 "	¾ "
" 6	4 "	1 "
" 7	4½ "	1 "

Messrs. Mayer and Phelps, 59, New Cavendish Street, London, W.1, have now made me a set in standard sizes, using the rubber which I consider the most durable. These, I understand, are now available to purchasers. The diagram shows the sizes obtainable, and I might add, for those who do not require a full set, the Nos. 3, 4, and 5 meet one's everyday requirements. The whole point is that one can now get the size one orders.

British Medical Journal

SATURDAY, SEPTEMBER 17th, 1932

ACUTE INTESTINAL OBSTRUCTION

At the Annual Meeting of the British Medical Association at Bath in 1925 Mr. H. S. Souttar presented figures from seven London hospitals showing the results of the treatment of intestinal obstruction in the previous five years.[1] At the Centenary Meeting in London Mr. Reginald Vick produced figures for a six-year period, 1925–30, which formed the basis of a symposium in the Section of Surgery on acute intestinal obstruction. A general report of the discussion appeared in the *Journal* of August 20th (p. 364), and the several papers are printed in our opening pages this week. Mr. Vick had followed the previous plan and classification, but had collected his figures not only from the London hospitals, but also from the provinces and Scotland. The combined statistics give a summary of nearly 10,000 cases, a number which is almost transatlantic in size, and their details are worthy of study.

The discussion that centred round these facts was chiefly concerned with the mortality figures and the methods of reducing a death rate which is so high that no surgeon can contemplate it with any satisfaction. Mr. Vick's table has two definite groups, cases of internal obstruction and cases of external obstruction. The total mortality rate is 26.2 per cent., a similar figure to Mr. Souttar's previous five-year period. An examination of the two groups shows that the mortality of external hernia is 17.8 per cent., and of internal obstruction 38.8 per cent. It was to this last group that the majority of speakers confined their remarks. Little or no attention was paid to the very high figure in the group of external hernia, a condition which is always sufficiently obvious, and about which no mistake should arise ; the fault of this must lie chiefly at the door of the public, who delay in calling in the medical practitioner to attend to a condition which they have known of for years, and which they treat almost as an old friend. Any attempt to improve the mortality figures of internal obstruction must be along the lines of earlier diagnosis of this abdominal catastrophe and improved methods of pre-operative treatment. The fault of late diagnosis is not always with the general practitioner, but in large measure with the public, who still insist on treating their own colics, and to a certain extent with the teachers of surgery who, instead of pointing out the early signs that should be looked for in obstruction, tend to emphasize what is spoken of as "the classical picture," which (as one speaker remarked) is usually that of impending dissolution. Further, cases of intestinal obstruction come into our hospitals most often in the evening, when the students have no opportunity of observing them, and they only see this type of case after operation.

[1] *British Medical Journal*, November 28th, 1925, p. 1000.

An important distinction has to be drawn between simple obstruction and obstruction with strangulation. In the first the patient may linger for weeks, but, as Professor Burgess points out, no patient can long survive a complete arrest of the blood supply to a portion of the bowel. This latter type, owing to the severity of symptoms, is likely to be recognized at an early date, and an examination of the figures of the duration in days seems to bring out this point. Physical examination will always reveal some suspicious fact which points to the necessity for further investigation, and stress was laid by several speakers on the importance of auscultation; the turbulent abdomen of the obstructed case, which reaches a crisis with the completion of the colicky pain, is of the greatest diagnostic significance. When there is doubt as to the passage of faeces or flatus, the administration of two enemas at intervals of an hour, and the examination of the result, will confirm the diagnosis ; and this is greatly helped by the evidence of the patient as to the relief or otherwise of the symptoms. The presence of unsuspected fluid in the stomach can also be determined by the passage of a tube, which if left *in situ* helps to drain the stomach and also gives warning of any change in character of the upper intestinal contents. The question of *x*-ray examination gives rise to a difference of opinion. It is practised more in America and Canada than in this country, and there is a body of opinion that maintains that even the taking of a plain *x*-ray picture is an unwarranted strain on a patient whose vitality is already under considerable stress. If such a radiograph, taken in the upright position, shows gas in the small intestine or fluid levels, the so-called "fluid mirrors," then positive evidence is forthcoming. In what proportion of doubtful cases such evidence is obtainable no one can say, and the method must for the present be confined to those cases admitted to an institution, where facilities are available which cannot be used by the general practitioner in his routine work.

Considerable advance has taken place in the pre-operative treatment of these cases. The recognition that in cases of obstruction the chlorides are deficient in the blood stream has given surgery one of its most potent weapons—namely, intensive saline medication before operation is undertaken. Surgeons differ only in the amounts and details of administration ; its beneficial effects are acknowledged by all. The passing of the stomach tube is also of great benefit ; not only does this drain the stomach before operation, but it prevents aspiration of stomach contents during operation, and it can be left *in situ* afterwards to facilitate the introduction of fluids or the aspiration of the stomach from time to time if regurgitation is taking place from the intestine. Used for this last purpose it takes the place of a jejunostomy. The necessity for the administration of anti-gas serum only arises in those cases in which the obstruction is associated with strangulation, and when the bowel has been sufficiently damaged to allow peritoneal infection. The operative procedure clearly should be the minimum that is needed

to relieve the obstruction, and, as Professor Wilkie says: "study the patients before embarking on operation, and thus avoid at operation all needless handling and exposure." The problem of what to do when you get there is one that opens up a large field for argument, but clearly each case can only be dealt with on its merits, with one outstanding feature common to them all—that the simplest method available for immediate relief of the acute obstruction must be undertaken, and plastic procedures should be left until the bowel has recovered.

The present discussion will have been of value in bringing perhaps to a wider surgical public the value of early diagnosis and the advantages of saline medication and gastric drainage in these cases, advantages which have possibly not had time to be reflected in the figures produced. It is to be hoped that when a further period of five years has elapsed and another set of figures is presented at a future meeting of the British Medical Association the mortality rate will show a definite decline, and that the opener of that discussion will not have to repeat the words of Sir Henry Newland: "The fingers and the graph on the wall . . . speak for themselves, and surely should give surgeons seriously to think."

THE MAUDSLEY HOSPITAL

Dr. Edward Mapother, medical superintendent of the Maudsley Hospital, has presented his fourth report summarizing the hospital's history during the five years ended December, 1931, and giving statistical tables which concern close on ten thousand patients who have been dealt with during this time. Though the economic crisis of August, 1931, made it necessary to defer certain long-standing projects which were on the point of realization, it is satisfactory to learn that neither a cessation of the growth of the hospital's usefulness nor even, in any full sense, a resting phase is to be expected. On the contrary, it is evident from the report that the functions of the hospital are undergoing considerable expansion. Thus, by agreement between the Central Public Health Committee and the Mental Hospitals Committee, it was decided that psychiatric clinics should be held at three of the Council's general hospitals under the direction of members of the Maudsley Hospital staff. In addition, the transfer to the control of the Mental Hospitals Committee of five mental institutions hitherto administered by the former Metropolitan Board has made it possible to arrange that pathological material from these institutions shall be sent to the central laboratory at the Maudsley Hospital. In this way co-ordination of both routine examination and research is assured.

As all the patients are admitted on a voluntary basis the internal functions of the hospital have not been affected to any extent by the Mental Treatment Act. The Act has, however, greatly improved the possibilities of out-patient treatment, since it legalizes expenditure on this highly important branch of hospital work. It further authorizes expenditure on the after-care of in-patients. During the year 1931 1,965 adults and 432 children attended the out-patient department. It is evident that a clinic of this size needs several competent psychiatrists, a number of clinical assistants, a psychologist, and a social worker to do full justice to the work, and Dr. Mapother states that in view of the increasing number of out-patients an enlargement of the department cannot long be deferred. An account of the development of the children's clinic is included in the report. It is interesting to note that the type of case is changing from the defectives, who formed the majority in 1923, to "problem" children in whom disobedience, lying, truancy, stealing, nervousness, and "school difficulties" have been the main complaint. Two gratifying features have been: the willingness of the school doctors, various social organizations, and head teachers to co-operate with the staff of the clinic; and the steady growth in the number of patients sent by their ordinary medical attendants and by voluntary hospitals. The latter is the best proof of the increasing appreciation by the profession of the usefulness of the hospital. Full reports are sent to all doctors referring cases, and a system is being adopted, in cases where there is no direct reference from the doctor, of sending an inquiry to the last medical attendant whose name is given by the patient.

The pressure for in-patient accommodation is very acute, 743 adults and fifty-three children having been admitted during the last year. Lack of suitable accommodation accounts for the small number of children taken in. It would appear that special premises are essential for dealing with children, and it is hoped in future to provide thirty beds, with a separate out-patient department, for them. When economic conditions permit it is also intended to acquire a "home of recovery" in the outskirts of London. Fortunately, the pressure for beds has been somewhat lessened by an arrangement with the governing body of King's College Hospital, which allows the Council to use a ward of the latter as an annexe to Maudsley for the next two or three years. The extent to which the medical work has increased is shown by the increase of the staff. During the past five years this has grown from five whole-time officers (including the medical superintendent) to nine, with one temporary assistant medical officer and two part-time assistant medical officers working in the out-patient department. (The hospital also has the advantage of a consultant staff drawn from King's College Hospital.) As a training school for psychiatrists the Maudsley Hospital is carrying out most valuable work. The systematic courses, intended to cover the whole field of psychiatry and allied subjects for diplomas in psychological medicine, are well attended by English and oversea graduates. In addition, Dr. Mapother lectures at King's College Hospital, and during the summer term gives to the students of King's College and the Middlesex Hospitals demonstrations at Maudsley upon mental disease, which, we are glad to observe, all undergraduates are

required to attend. Many other opportunities of study are open to the clinical assistants and social workers in training, and are attended by a number of undergraduates, post-graduates, oversea visitors, and neighbouring practitioners. In April, 1931, the Board of Directors of the Commonwealth Fund appropriated the sum of £1,200 for two fellowships in psychiatry, amounting to £600 each, to be administered by the Maudsley Hospital during the following year.

Some interesting details are given on the financial aspects of the hospital. The increase of daily population by one-fourth (148 to 184) has been associated with a saving of £3,300 per annum. In five years the decrease in net cost to the county is 17s. per patient per week. Apparent net saving on expenditure is only 1s. per head per week, 16s. of the saving being due to increase in average rate of contribution. Dr. Mapother deems it fairly certain that if the Maudsley did not exist, and those of its patients who could be so dealt with were treated elsewhere, they would cost far more. Approximately half the cost of patients in the hospital is paid for by contributions, a considerable proportion of which comes from private patients. The advantage of having the latter in the hospital arises from the fact that they add nothing to the overhead charges, which would be the same if the private patients did not exist or were replaced by poorer patients. It is suggested that it would be both legitimate and profitable to add more special accommodation for private patients, and this is one of the items of the proposed extensions which are at present deferred. The above figures are encouraging to those who look forward to the time when a psychiatric clinic will become a feature of the educational system of every city with a university and medical school. As Dr. Mapother pertinently observes, whatever the scientific evidence may be regarding the usefulness of psychiatric clinics such as the Maudsley, and whatever the pressure on the accommodation of such as exist, net cost will nevertheless decide the question whether they shall ultimately become a part of the health service of every large community. Those who are interested in the development of psychiatry in this country cannot fail to be stimulated by the report. It is evident that there has been, in the five years under review, a continuous expansion of the clinical, educational, psychological, social, and pathological services, and that the Maudsley Hospital is carrying out work of the highest value to the community.

THE REGIUS CHAIR AT CAMBRIDGE

On September 30th Sir Humphry Rolleston retires from the Regius Professorship of Physic in the University of Cambridge on completion of his term of office, and will be succeeded by Dr. Walter Langdon Brown, consulting physician to St. Bartholomew's Hospital and the Metropolitan Hospital. During his seven years as head of the Cambridge Medical School Sir Humphry Rolleston has upheld the great tradition that passed into his keeping on the death of Sir Clifford Allbutt. Regret that Sir Humphry's most distinguished tenure of the chair is now ending will be tempered by satisfaction at the choice of his successor—a devoted son of Cambridge whose professional career has fulfilled the promise of a fine record in science at the university. As a clinician whose practice and teaching are rooted on the one side in physiological principles and on the other in a belief that the province of medicine is coterminous with life, Dr. Langdon Brown's influence has spread far beyond the great hospital with which he was actively associated until a short time ago. This appointment proclaims that the Regius Professorship of Physic at Cambridge is still regarded as a clinical post—as we believe it should be. Furthermore, Dr. Langdon Brown's long experience in the teaching of physiology will enable him to act as liaison officer between those responsible for the preliminary courses at the university and the clinical teachers at the hospitals. In bridging that gap there is good work to be done. Cambridge is happy in finding a forward-minded scientific physician, and a humanist in the broadest meaning of that term, to follow Sir Humphry Rolleston.

PREDISPOSING FACTORS IN CHRONIC RHEUMATISM

It is becoming increasingly evident that focal sepsis can no longer be considered as the alpha and omega of the rheumatic aetiology. In view of the recent recognition by both the medical and the lay public of the social significance of this group of diseases, we welcome genuine investigation of this somewhat meagrely explored field of medicine. It has been said by Sir Farquhar Buzzard that the real problem involved in the treatment of rheumatism is the problem of causation. In considering this problem it is recognized that factors interfering with the general equilibrium of health in many cases pave the way for the onset of disease. So obvious did this fact appear to Miss M. E. Edminson, who as almoner of the British Red Cross Clinic for Rheumatism was in a position to study the records of many thousands of such cases, that through her influence a research worker was appointed in 1931 by the Hospital Almoners Institute to prepare a preliminary report on these lines. This report has been completed, and was recently presented at the second International Conference on Social Work at Frankfort-on-Main by its author, Miss Joyce Blackham. It is recognized by those familiar with this group of diseases that in rheumatoid arthritis there is commonly a history of definite prodromata such as loss of appetite and weight, fall in blood pressure, undue fatigue, and general nervousness. When in this sensitive state some exciting factor such as excessive mental or physical strain, pregnancy, or intercurrent infection occurs, the familiar joint changes will in due course make their appearance. It seemed, therefore, to Miss Edminson that the social worker might have a contribution to make in the prevention of arthritis by the investigation of the social and economic factors encountered in the pre-rheumatic stage. It is perhaps a pity that the present report was not confined to rheumatoid arthritis, which is clear-cut in its symptomatology, since its relation to the other members of the so-called rheumatic group—also included in the series—is doubtful. Fifty consecutive cases of chronic

rheumatism seen at the British Red Cross Clinic for Rheumatism and fifty healthy control cases were studied. These subjects were all women in whom the disease had manifested itself before age of 35. This excludes the many complicating factors incidental to the menopausal type of rheumatism. The rheumatic patients were classified broadly into articular and non-articular groups, special emphasis being laid on the true rheumatoid arthritic in the former group. It was found, rather surprisingly, that the familial incidence of the disease was not well marked in the evidence obtained on this limited number of cases, neither could the housing factor (damp) be shown to play an important part in aetiology. The inquiry into possible occupational factors is important and interesting but naturally inconclusive, and opens out a profitable field for further medical and lay investigation. The greatest degree of physical strain was complained of in the non-articular group (74 per cent.), and was most often caused by bad conditions of labour. Long hours, standing, and the addition of household duties are also cited as frequently occurring in the history of this group of patients. An assessment of the emotional factor in these groups rightly emphasizes the importance of the various psychological stresses which it cannot be denied have their place in the aetiology of rheumatism. It is unnecessary to accept the figures given in the report owing to the small numbers of patients falling into each group ; it is, however, undoubtedly worth noting Miss Blackham's observation that the relative importance of physical and emotional strain in each individual studied varied in the three diagnostic groups. Physical fatigue predominated in non-articular rheumatism and emotional strain in the " mixed " arthritic group, while both were excessive in every case of rheumatoid arthritis. In the interests of preventive medicine predisposing social factors are of primary importance. This report would appear to be the first attempt to study and define these factors in the field of the chronic rheumatic diseases. No new causative factor has been brought to light, but careful inquiry has substantiated by detailed evidence the old belief in the association of the onset of these diseases with occupational fatigue and emotional disturbance, and so points the way a little more clearly to the prophylactic aspect of these costly charges on industry and insurance. The Hospital Almoners Institute and the British Red Cross Clinic for Rheumatism are to be congratulated on their novel and profitable experiment in team work.

DIABETES AT THE MAYO CLINIC

Dr. F. N. Allan's survey of the diabetic work at the Mayo Clinic in 1930[1] reveals some interesting facts. The number of patients treated was greater than ever before, and 50 per cent. higher than in the pre-insulin era. Diabetes is probably on the increase, but the larger number of patients treated is largely due to the fact that public and practitioners both appreciate the value in treatment of the special facilities provided by such a clinic. The results of treatment were highly satisfactory, and adequate diet and insulin enabled all but one patient to regain health and return to active life, except when some complication caused trouble. The results with insulin in children were extremely gratifying, and a complete contrast to the formerly hopeless outlook. In the 840 cases treated, 1,386 complications were recorded. These showed that diabetics are not immune to any disease. Of the conditions directly associated with diabetes, heart disease—including angina—was the commonest, cholelithiasis a close second, and peripheral neuritis third. Gangrene was comparatively rare. The statistics of the clinic clearly show that careful medical control makes operation on a diabetic as safe as on a normal individual: 136 major and 152 minor operations were performed, with five deaths, in only one of which was diabetes "perhaps" a contributory factor. Forty-two deaths occurred among the diabetics treated at the clinic in 1930, and aetiological analysis does the clinic great credit. The former chief causes of " diabetic deaths "—coma and gangrene—accounted for only three cases ; in both coma cases insulin had been discontinued. Carcinoma heads the list and heart disease is second. The conclusions resulting from a year's survey seem worth quoting verbatim:

" With effective treatment, diabetes has come to have less and less effect on the lives and on the deaths of the persons affected. Treatment is no longer so disagreeable and unpleasant. With insulin it is possible to give a diabetic patient all the food he needs and almost all he wishes. The disease need not interfere with work or with school or college education. It will probably have little effect on expectancy of life. This is the situation with good treatment. Unfortunately, a large proportion of diabetic patients fail to receive adequate treatment. Mild cases go with little, if any, attention, and severe cases have only partial control. The difficulty arises from the fact that such patients may seem to be well enough, and the consequences of neglect are not appreciated. Yet, failure to control diabetes completely may lead to trouble in various ways. There may be insidious impairment of health and vitality ; there may be progression of mild diabetes to a severe grade ; there may be susceptibility to infections and degenerative changes in arteries, nerves, and eyes, and, finally, there may be risk of death from coma, particularly if the condition is aggravated by a complication. Most of these dangers can be avoided by thorough treatment."

LIPIODOL IN SPINAL DISEASE

It is only eleven years ago that lipiodol was first used in diagnosis, yet so great has become its value in many branches of radiological work that it is difficult to imagine the investigation of certain conditions—for example, spinal cord tumours—without its aid. The pioneers in this work, J. A. Sicard and J. Forestier, published a valuable and comprehensive monograph on the whole subject nearly four years ago. Shortly after this Professor Sicard died, a great loss to French medicine and to medical research in general. An English translation of this book[1] has recently appeared. Well served by the publishers in the matter of paper, illustrations, and general production, this complete survey of the history and uses of lipiodol for diagnosis and treatment will undoubtedly prove as popular to the English-speaking members of the profession as its French predecessor. It will be remembered that one

[1] *Proceedings of the Staff Meetings of the Mayo Clinic* (vol. vii, No. 10).

[1] *The Use of Lipiodol in Diagnosis and Treatment.* By J. A. Sicard and J. Forestier. Oxford Medical Publications. London: Milford, Oxford University Press. 1932. (16s. net.)

of the earliest uses of lipiodol was its injection into the cisterna magna in order to demonstrate spinal block. In an article appearing in a recent issue of the *Journal of Neurology and Psychopathology*,[1] Dr. H. H. Moll of Leeds deals in some detail with this aspect of the use of lipiodol. Cisternal puncture carried out by the method he describes, and followed by the introduction of 1.5 to 2 c.cm. of lipiodol, appears to be devoid of danger, and at the worst produces a slight rise in temperature, with some stiffness of the neck muscles and headache. In the absence of any block the lipiodol passes straight down the spinal canal and falls into the dural cul-de-sac, where it can be seen at the level of the second sacral vertebra. When there is no arrest of the lipiodol gross spinal block can obviously be excluded, but it is not so certain that a negative result excludes a small tumour. Partial arrest may occur at the beginning of extradural or intradural compression, particularly in cases of intramedullary tumour. Dr. Moll urges that, whenever a partial obstruction is suspected, the patient should be *x*-rayed again and the progress of the oil along the spinal canal carefully checked. Partial arrest sometimes occurs in syringomyelia, in traumatic myelitis, and in traumatic haematomyelia. According to Dr. Moll, in the two latter conditions the oil is arrested in the form of globules along a fairly large segment of the cord. Other causes of incomplete arrest offer great difficulty in diagnosis. Hypertrophic pachymeningitis may completely obliterate the subarachnoid space and hold up the lipiodol in exactly the same manner as a spinal tumour causing obstruction. The radiological appearance in cases of meningitis serosa circumscripta is often quite typical, large droplets along a long segment of the cord being seen without any clear-cut line of arrest. Complete arrest, however, is characteristically seen in cases of spinal tumour, although it is rarely possible to determine the nature of the tumour by the shape of the lipiodol shadow. Examination after the injection of lipiodol affords an accurate method of localizing the level of obstruction, and indicates a centre for laminectomy. In each of six cases of spinal tumour described by Dr. Moll the lipiodol correctly determined the level of the tumour, which neurological examination had tended to localize below its actual level. It is mentioned in conclusion that caution is necessary in inflammatory conditions of the cord and meninges, as in these cases the iodine component of lipiodol may have a congestive action and lead to an aggravation of symptoms.

[1] Vol. xiii, No. 49. July, 1932. Published by the British Medical Association.

CONTROL OF TRAFFIC IN DANGEROUS DRUGS

Exactly a year ago we called attention to the new convention dealing with narcotic drugs—the outcome of an international conference which sat at Geneva from May 27th to July 13th, 1931. It had for its object to "supplement" the opium conventions of 1912 and 1925, which, in the words of the former treaty, sought "to limit exclusively to medical and legitimate purposes the manufacture, sale, and use of morphine, cocaine," and other dangerous drugs. The signatories undertook to "co-operate with one another to prevent the use of these drugs for any other purposes." The extensive illicit traffic in narcotics disclosed by recent reports has emphasized the conclusion that either the necessary provisions for detection and suppression of the contraband trade were not included in the earlier conventions or that there has been failure to secure such international co-operation in administration as would effectuate the obligations which have been entered into. The chairman of last year's conference claimed success for its achievements, and the new convention was said to cover "all known and possible derivatives of opium and coca leaf" which could give rise to addiction. It will be remembered that the conference rejected the proposal to allocate quotas of the ascertained world requirement of these drugs to the several producing countries. An alternative method, whereby each nation should annually furnish to the Central Opium Board estimates of its legitimate requirements, was adopted, although the chairman expressed his apprehension that "it would be very difficult to apply." That may or may not prove to be the case, but up to the present time it appears that the new convention of 1931 has not come into force. That stage, indeed, cannot be entered upon until "ninety days after the Secretary-General of the League of Nations has received the ratifications or accessions of twenty-five members of the League of Nations or non-member States, including any four of the following: France, Great Britain, Germany, Japan, Netherlands, Switzerland, Turkey, and the United States." According to the Anti-opium Information Bureau, which is usually well informed on procedures at Geneva, "so far only one manufacturing country—the United States of America—has ratified the convention, and only four non-manufacturing countries—Nicaragua, Peru, Persia, and Portugal—have either ratified it or acceded to it." The period by which it was anticipated that the necessary ratifications and accessions would be received is April 13th of next year. If, therefore, no time is to be lost in putting the new convention into operation, it is clearly desirable that the rate of deposit of ratifications or of intimations of accession should be accelerated.

THE MEDICAL REGISTER: UNTRACEABLE PRACTITIONERS

We publish in the *Supplement* this week (p. 176), at the request of the Registrar of the General Medical Council, a list of the names of those medical practitioners who have not replied to his inquiries as to the accuracy of their postal addresses. Any practitioner, wherever resident, whose name is included in this list should communicate at once with the Registrar of the General Medical Council, 44, Hallam Street, Portland Place, London, W.1, or, in certain specified cases, with the Registrar of the Scottish Branch Council, 12, Queen Street, Edinburgh.

We regret to announce the death, on September 12th, at New Barnet, of Dr. T. H. C. Stevenson, C.B.E., a great public servant who retired last year from his official work at the General Register Office.

THE BRITISH ASSOCIATION

ANNUAL MEETING IN YORK

(*Concluded from page 528*)

From a programme of discussions and papers which ranged between "The mobility of positive ions in gases" and "A scheme for recording immigrant insects in Great Britain" (the titles of the first and last papers in the Sectional transactions of the meeting of the British Association in York), and which covered recent advances in chemistry, zoology, anthropology, psychology, and other specialized fields of pure and applied science, it might not seem difficult to extract material having a special interest for the medical profession; but though in all the Sections some at least of the papers touched on medicine, in only a few, as, for example, in the symposium on helminthology, was the medical interest a predominant one.

APPLIED HELMINTHOLOGY

This symposium, over which Lord Rothschild presided in the Section of Zoology, was introduced by Professor R. T. Leiper, who treated of the subject in its relation to medicine. Helminthology, he said, began as a branch of medicine, the earliest known English book on the subject having been written in 1668 by the then Physician Royal, Sir William Ramsey. The theory of spontaneous generation established helminthology as a single entity, and this unity was maintained when a study of the life histories of parasites showed that they included members of different zoological phyla. The first requirement in medical helminthology—a simple diagnostic technique—had been available since 1837, when Davaine had pointed out the value for this purpose of the shape and size of the eggs. In recent years more elaborate methods had been evolved—notably by Stoll and Clayton Lane—and the latter's method was sufficiently accurate to diagnose the presence of a single egg-producing worm. Serological tests had now been elaborated for some of the somatic parasites, and for detecting calcified tissue parasites x rays had been found useful. The basis of personal sanitary methods against helminths lay in the discovery that the eggs and larvae of worms were not infective when passed from the body, but became so only after a period of development in the egg, soil, or an intermediate host. Infection took place through the mouth or the skin; through the former by water (as with bilharzia and Guinea worms), by an accidental food contamination (by, for example, ascaris and whipworms), or by a specific food infection (as by tapeworms and trichinella); through the latter by the worms' own activity (hookworms), or by the bite of an intermediate host (Filaria worms). This knowledge was used in formulating rational means of personal prophylaxis, but often the necessary measures were beyond the capacity of the individual, and the sanitarian had to evolve methods of protecting the community. Much fundamental information, said Professor Leiper, had been obtained by animal experiment—facts, for example, about the migrations within the body of hookworms, lung flukes, bilharzia worms, and ascaris, and methods of preventing infection by these parasites. He dwelt also on the necessity for considering natural reservoirs of human helminths, drawing attention to possible fallacies introduced by such biological strains as *Ascaris lumbricoides* of the pig and man, which, though morphologically identical, were not mutually infective. Man could, of course, be infected by the larvae of animal worms, but these, though they might cause a severe and painful urticaria, did not develop to maturity in this abnormal host. One of the strangest examples of this phenomenon was the sparganosis which resulted from the use by some natives of the East of split frogs as cooling poultices to wounds, whereby the larvae of dog tapeworms were transferred directly to man. The mass treatment of communities by such drugs as carbon tetrachloride was a sanitary measure of the utmost importance. There was still a need for research into applied helminthology, and it was to be hoped, said the speaker, that with a return to normal financial conditions this matter would receive consideration.

Professor T. W. M. Cameron discussed the economic importance of helminths in stock animals. Domestic animals, he said, normally lived in an environment that was highly favourable for worms. Agriculture had made possible the maintenance of large flocks on ground previously suitable only for small numbers, and the animal population of Britain was now over 38 millions, excluding dogs. Parasites had evolved in the era of light stocking, and practically all animals became lightly infected. With concentration these numbers increased to such an extent that, in his estimate, the annual loss in Britain was over ten million pounds. Some of this loss was already preventable, but even greater saving could be effected if we knew more about the thousand different species of worms which infected domestic animals. Actually we knew very little about them beyond their shape. Having outlined the general principles of prevention, the speaker pleaded for better elementary teaching in zoology, the present inadequacy of which he held responsible for much of the existing indifference to helminthology as a subject offering scope for original investigation. More and better research was urgently required, and could be carried out in large part by veterinarians or agriculturists with a training in zoology. Dr. Marjory Triffitt discussed the economic significance of eelworms in plants and showed that they seriously affected certain food crops. Dr. T. Southwell's contribution to the symposium was concerned with tapeworms in marine fishes, none of which were communicable to man. Of economic importance, however, was the fact that Ceylon pearls were formed by the oyster round the dead larval stages of certain tapeworms of sharks and rays. Mr. F. J. Brown discussed the excretory system of trematodes in relation to their classification; and Dr. J. N. Oldham considered helminths as a means of controlling various insect pests. Insect parasitism by helminths, he said, was generally overlooked, though in addition to acting as intermediate hosts for helminths of man and animals, many species were primarily parasitized by worms. Dr. B. G. Peters outlined the history and aims of the Imperial Bureau of Agricultural Parasitology and showed how it was actively assisting research in applied helminthology as well as disseminating knowledge on the subject. The Bureau was engaged in collecting references and literature, preparing monographs and pamphlets, and assisting in the preparation of *Helminthological Abstracts*, a new publication designed to place before all interested (including medical men) concise summaries of all papers on this subject.

MODERN PSYCHOLOGICAL THEORIES

In her presidential address to the Section of Psychology, Professor Beatrice Edgell analysed the outstanding present-day theories in psychology, showing how closely divergencies of doctrine corresponded with the unreconciled methods and principles that had been set forth nearly 250 years ago by John Locke. Her analysis, she confessed, might seem to have given support to the gibe that to-day there was no psychology, only a collection of psychologies; and there was indeed much in the present situation that might give rise to a sense of disappointment in those who belonged to the older generation. The present century had opened full of hope. Psychology was emerging as a new science, distinct both

from philosophy and physiology, and rapidly developing its own technique. Schools there were in a very limited sense, but all was set fair for the growth of the "new" psychology. The lines of cleavage between Leipzig, Göttingen, Paris, Harvard, Cornell, and the rest were then but furrows in a common experimental field; yet to-day the schools appeared to be separated by unbridged gulfs. Was the present division of theory, asked Professor Edgell, really a bad sign? Did it indicate a petering out of the spirit that had animated the workers from 1879 to 1900, or was it a sign of vigour? She, for her part, supported Professor Woodworth's view that all the schools were emphasizing something that demanded emphasis and served a useful function in the progress of psychology.

Suggestion and the Will

Addressing the same Section Dr. William Brown discussed the relation between imagination and the will, especially with reference to the theory, epitomized in the so-called law of reversed effort, that "where the will and imagination are in conflict the imagination always wins." According to any systematic theory of psychology, he said, the will was the highest form of mental activity, bound up so completely with the conviction of success that without the latter the psychologically effective act of will was represented merely by a "wish." When the desired result was known to be unattainable the conflict was not between will and a negative suggestion, but only between the suggestion of success and the suggestion of failure; it was, in short, a conflict between two imaginations, unaccompanied by any special emotion. Modern investigations in the psychology of suggestion, and their application in psychotherapy, had shown how, by contributing to an adequate control of the imagination, the appropriate suggestion could strengthen "will-power," enabling the mind to contemplate success with sufficient conviction. We should all, said the speaker, train our imaginations so that fear might be replaced by confidence; we should make affirmation to ourselves that whatever happened we should fear nothing nor be disturbed in mind. Perseverance in the practice of auto-suggestion sometimes had so transformed the temperament that even the self-tormenting hypochondriac had become a person of calm tenacity of purpose and serene self-confidence. In an even more striking way hypnotism could produce a reorientation of subconscious psychical forces, and so a corresponding enhancement of will-power and transformation of character.

Conditioned Reflexes

In a paper on animal behaviour Mr. R. Knight said that the existence of mind in animals was but a "precarious inference," not an observed fact. Köhler and Lloyd Morgan had, indeed, urged that some of the responses of animals to new situations, and to training, were such as could arise only from mental activity; but there was no more evidence, said the speaker, that the response to stimuli proved that the animal consciously distinguished between these stimuli than that mind existed in the decapitated earthworm, which would keep away from the place where it had been injured, or in the pithed frog, which would scratch the harder the more acid one placed on any spot of its skin. The fact that animals could learn all manner of complicated tricks showed nothing more than that they could be brought to respond in particular ways to particular stimuli. All their activities could be interpreted on the hypothesis that inborn ways of behaviour could be altered and adjusted by an appropriate conditioning of simple nervous reflexes. Recent experiments in the training of animals which had been carried out in the department of comparative psychology in Aberdeen University had shown how comprehensive the application of trial and error was in animal behaviour, how large a part was played by conditioned reflexes, how adequate were Pavlov's conclusions, and how easily animals could acquire an entirely unmerited reputation for intelligence and other mental characteristics. These experiments had demonstrated the puzzlement and stupidity of dogs, cats, and other animals on the slightest change in the environment to which they had become accustomed, and how even the cleverest of them could be baulked by practical problems that would present no difficulties to young children.

Serological Differentiation of Race Groups

Professor V. Suk, in a paper read before the Section of Anthropology, discussed the value of serological tests and tests based on blood grouping as means of differentiating human race groups. The conclusions set forth were based upon over 3,000 precipitation tests and 4,000 blood groupings. The serums and antiserums used in the investigation had been obtained from Eskimos, Kalmucks, gipsies, European Jews, and such European types as the nordic, alpine, and dinaric. Tests carried out with twenty-five serums and fifteen antiserums had suggested the conclusion that the so-called European race groups were not true races at all, but only types or not fully established races in the process of making. Well-marked differences were found, on the other hand, between those distinct and geographically separated groups, the Eskimos and the Kalmucks, and there were well-marked immunological differences between Eskimos and Europeans as a whole. As for the 4,000 blood groupings, said the speaker, attempts to correlate these with such anthropological characters as eye colour, hair colour, and so forth had lent no support to the view that blood groups had an important racial significance. There was perhaps some correlation, but it had been grossly overrated.

Scotland

Mr. James R. Learmonth, M.B., Ch.M., F.R.C.S.Ed., surgeon to the Mayo Clinic, and associate professor of neurological surgery in the University of Minnesota, has been appointed to succeed Sir John Marnoch as regius professor of surgery in the University of Aberdeen.

Health of Scotland

The return of the Registrar-General for Scotland for the quarter ending June 30th, 1932, shows that there were 24,250 births, 1,182 more than in the preceding quarter, giving a birth rate of 20 per 1,000 of population. Compared with the corresponding quarters of the five previous years, the number of births and the rate per 1,000 were respectively 584 and 0.5 below the average. The birth rate varied from 31 in Port Glasgow and 25.3 in Coatbridge to 16.2 in Edinburgh and 13.3 and 13.6 respectively in the counties of Selkirk and Perth. Male children born numbered 12,461, and female 11,789. Deaths registered during the quarter numbered 16,410, giving a death rate of 13.5 per 1,000; this was 3,224 fewer than in the previous quarter, or a death rate of 2.7 less. The death rate ranged from 17.1 in Port Glasgow and 16.9 in Arbroath to 10.4 in Clydebank and 10.2 in Dunfermline. There were 1,975 deaths of children under 1 year, giving an infantile mortality rate of 81 per 1,000 births. Compared with corresponding quarters in the last five years, the infantile mortality rate was 4 above the average; it ranged from 117 in Port Glasgow and Dumbarton to 0 in the counties of Kinross and Zetland. The principal epidemic diseases, especially influenza and measles, accounted for 6.1 per cent. of deaths, tuberculosis for 7.1 per cent., malignant disease 10.9 per cent.,

pneumonia 7.6 per cent., and bronchitis 4.4 per cent. Deaths of mothers from diseases and accidents of pregnancy and childbirth numbered 140, giving a rate of 577 per 100,000 births, which compared favourably with the standard of 584 for this quarter. Deaths from violence numbered 715, accounting for 4.4 per cent. of all the deaths, and in this group 148 were attributed to motor accidents, an increase of 20 as compared with the previous quarter.

Royal Faculty of Physicians and Surgeons

At the close of the monthly meeting of the Royal Faculty of Physicians and Surgeons of Glasgow, held on September 5th, an interesting ceremony took place when Mr. Walter Hurst, J.P., having recently retired from the position of secretary, was presented by the president, Dr. R. Barclay Ness, on behalf of the Fellows, with a bureau and wallet with cheque as a mark of appreciation of his valued work. Mr. Hurst, whose connexion with the Faculty has extended over twenty-five years, was at first associated with the late Alexander Duncan, LL.D., as his assistant, but after some years took over all the duties of the secretary. These were of a varied character, including those of acting librarian. From the first Mr. Hurst took a very keen interest in the success of the library, which now contains over 120,000 volumes. Gradually he became familiar to a remarkable degree with its contents, and so was able to help those whose work led them to dig deep and unearth its literary treasures.

Stirling Contributory Scheme

During the last three years the accounts of the Stirling Royal Infirmary have shown an average annual deficit of about £1,600, and as these deficits cannot be met by further economies in the working expenses of the infirmary, the directors have decided to extend the present contributory scheme. It has been the practice for employees, especially of mines and railways, to contribute regular subscriptions by weekly or monthly deductions from wages or salaries, and in return for this they have been guaranteed free treatment for themselves and their dependants at the Infirmary and the Victoria Convalescent Home. The income derived from these contributions in the past year was £2,100, and a further £2,000 was received from other patients towards maintenance and treatment. There are, however, a large number of persons quite able to contribute towards maintenance and treatment who make no payment. The directors have accordingly issued an appeal to employers and employees to regularize and complete the contributory scheme by extending it to all wage-earners in the district, and to all other persons whose total income does not exceed £250 per annum. It is proposed to set up local committees in various districts of the area served by the Infirmary who will supervise the collection of contributions. Contributors will receive free treatment of every kind for themselves, their wives, and dependants under 16, when recommended as requiring treatment by members of the medical staff of the Infirmary. Contributions will be at a minimum rate of twopence per week—for persons between the ages of 16 and 18 the contribution will be limited to one penny per week—and they must be paid for three months before benefit can be received.

Dundee Royal Asylum Report

The annual report to the directors of Dundee Royal Asylum by the medical officer, Dr. Arthur Dalgetty, showed that during the year fifteen cases had been admitted, of whom nine were voluntary and six certified patients. Eleven patients had been discharged as recovered or relieved, and ten had died, leaving fifty-two names on the register, of which twelve were those of voluntary patients. The deaths had been due mainly to an influenza epidemic to which old patients especially succumbed.

England and Wales

Tuberculosis in Birmingham

In Birmingham during 1931 the number of notified cases of tuberculosis was 1,679, as compared with 1,483 in the previous year and 1,538 in 1929. This breaks the steady decrease in the number of new cases which has persisted since 1923, and in the report of the Public Health Department for 1931 is held to be not attributable to more complete notification, nor to a slight extension of the city area. The increase is spread over the whole of this area, but is slightly more marked in the inner ring. It does not appear to be due to a possibly lower nutritional standard occasioned by a higher degree of unemployment, for it is not confined to pulmonary cases; it occurred almost entirely during the first quarter of the year, and followed a rise in the incidence of respiratory diseases in the last quarter of 1930. The death rate per 1,000 was 1.06, as compared with 1.03 in 1930. Dr. G. B. Dixon, chief clinical tuberculosis officer, states that 40.9 per cent. of the deaths occurred in "hospital" beds in sanatoriums and other institutions controlled by the public health authority—a figure indicating a gratifying degree of supervision of these cases in their most infectious stages. He adds that the anti-tuberculosis centre, which is centrally situated in the city, is being attended by an increasing number of patients suffering from pneumoconiosis, many of whom have acquired the disease from the inhalation of dust arising from trade processes. In some instances these processes are not included in the schedule of occupations in respect of which compensation can be claimed if disability or death ensues; they are therefore at a serious disadvantage. Of the adult patients 23.5 per cent. were referred for treatment while their working capacity was still unimpaired; 33.6 per cent. were totally incapacitated at the time when they were first seen. In the case of children, 53.7 per cent. of the new patients were still able to attend school regularly, while 20.9 per cent. were completely incapacitated. Tubercle bacilli were found in the sputa of 58.4 of adult new patients with pulmonary tuberculosis, and in 12.6 of the children. All children, whether admitted for observation or treatment, have the faeces or a gastric lavage result examined for tubercle bacilli, and are submitted to a Pirquet or Mantoux tuberculin test. In only a small number of the faeces were acid-fast bacilli detected, but a large percentage of these proved to be tubercle bacilli. In all the municipal sanatoriums particular attention is paid to occupational therapy, and some after-care work has been provided for patients with arrested disease.

Presentation to Dr. R. Y. Aitken of Blackburn

At a public gathering at Blackburn on September 1st, presided over by the mayor, and attended by many members of the medical profession and prominent citizens, Lord Moynihan unveiled and presented to Dr. Robert Young Aitken his portrait in oils, which has been subscribed by Dr. Aitken's friends in recognition of his many years' service on the staff of the Blackburn and East Lancashire Royal Infirmary. Lord Moynihan said that in Blackburn Dr. Aitken had been a distinguished surgical pioneer. He had brought new weapons into action and had created machinery by which new methods could be practised; he had given the public confidence and faith in the great advance of surgery, and he had trained younger men in the true practice of the most skilful and beneficent work which the hands of man could execute. He had demonstrated that in surgery as in other affairs of life knowledge was the first essential and the groundwork upon which all else was to be built, and that to this must be added wisdom, which was the just and timely applica-

tion of knowledge, but, above all, he had made it clear once again that it was not knowledge and wisdom, but character which chiefly counted. It was not only for his qualities as a surgeon that Dr. Aitken's professional colleagues and fellow citizens honoured him, nor for his services to medicine, but also for his fine personal qualities, his devotion, integrity, loyalty, tireless and selfless industry, and the example he had set of what the practice of medicine meant and implied. Dr. Jeffrey Ramsay added a few words as representing the local medical profession, saying that Dr. Aitken had left the impress of his personality upon all who had been privileged to work with him for many years. Consciously or unconsciously, they had adopted many of his mannerisms, and even some of his phrases, and he hoped they had acquired his direct and straightforward way of approaching medical problems. He had admonished them, differed from them, taught and helped them, and with all their faults had loved them still. Dr. Ramsay spoke of the high standard of work which Dr. Aitken had exacted from those associated with him, but said that he had set a standard for himself which was higher still. Dr. Aitken, in reply, after thanking the organizers of the presentation and the subscribers, recalled the fact that he came to Blackburn as house-surgeon to the Royal Infirmary in 1897, merely on the casting vote of the then chairman of the board, Mr. Mitchell Eccles—by such slight circumstances was the direction of a life's work determined. He expressed his gratitude to and his affection for the Lancashire folk amongst whom his professional career had been spent. In speaking to a vote of thanks to Lord Moynihan, Dr. Alfred Moffatt mentioned that Dr. Aitken as a young house-surgeon had actually helped to build the new infirmary, joining the workmen in the labour of digging the trenches for the foundations.

A lengthy appreciation of Dr. Aitken, evidently by a medical colleague, appeared in the *Blackburn Times* of September 3rd, in which reference is made to the "Aitken tradition" which has grown up in Blackburn since 1904, when Dr. Aitken, after three years' service as assistant honorary surgeon, became senior honorary surgeon to the Royal Infirmary. Although now retired under the age limit, he is honorary consulting surgeon, and by the unanimous desire of his medical colleagues, an arrangement has been arrived at with the governors that beds shall still be at his disposal. Dr. Aitken has been a member of the Blackburn Insurance Committee since its inception, and medical referee under the Workmen's Compensation Acts since 1913, and he is a past chairman of the Blackburn Division of the British Medical Association.

London's River Ambulance Service

The river ambulance service of the London County Council is to be discontinued. This service was established nearly half a century ago for the conveyance of small-pox patients between London and the small-pox hospitals, which then consisted of hulks moored in the Thames seventeen miles below London Bridge. The service now comprises two small-pox receiving stations at Rotherhithe and at Blackwall, and four steamers, the largest of them, known as the *Red Cross*, carrying sixty-eight patients. Use has only been made of this service in epidemic periods, the last occasion being 1929-30, and with the introduction of the motor ambulance it has become obsolete. Instead of the river service it is proposed to obtain in the first instance an additional motor ambulance, and later two others, which will be available for use—when not required for small-pox cases—in the land ambulance service generally. The Rotherhithe receiving station will be retained, and that at Blackwall closed. The estimated gross saving effected by the closing down of the river ambulance service and one station is £5,075 a year; the cost of the three land vehicles will be £4,200.

Census Figures for Kent

Statistics relating to the county of Kent show that on the night of the 1931 census the total population of the administrative county (including the borough of Canterbury) numbered 1,219,273. This represents an increase during the past intercensal period of 77,607 persons, as compared with the figure of 96,075 for the previous decennium. Of the total population 72 per cent. is domiciled in boroughs and urban districts, the remainder in rural districts. For the county as a whole the density of population is 1.2 persons per acre—the same as in 1921—that of the urban portions being 6.6, and of the rural portions 0.4. Persons over the age of 21 numbered 814,297, while the average excess of females for the county is 8.7 per cent. in respect of population and 14.7 per cent. in respect of electorate. As regards housing, the past ten years have seen an increase of 59,554 (25 per cent.) dwellings. The number of private families has grown by 22.6 per cent., the average number of families per occupied dwelling being 1.08, as compared with 1.10 in 1921 and 1.04 in 1911. Broadly speaking, 85 per cent. of families live in single occupation of separate premises, 12 per cent. two to a dwelling, and 3 per cent. three or more to a dwelling. The increasing predominance of the three-person family, and next to that the two-person family, is brought out by the percentage distribution, which shows that these two categories now account for 48.1 per cent. of all families, the proportion having advanced thereto from 40.1 per cent. in 1921 and 37.2 per cent. in 1911. On the other hand, the larger families, comprising, say, eight persons or more, have been greatly reduced in numbers, despite the large increase of population during the past twenty years, and now account for only 3.6 per cent. of the total.

Ireland

Sir William Wheeler's Departure from Dublin

A presentation was made to Sir William I. de Courcy Wheeler, who is leaving Dublin for Southend, at a meeting of the governors and medical staff of Mercer's Hospital, of which he was senior surgeon, and to which he has been attached for twenty-eight years. Sir William's departure from Dublin, where he and his late father were so well known in the medical profession, is greatly regretted; he was a prominent and active member of the British Medical Association, and was president of the Leinster Branch. He contributed freely to the current medical literature, and took a very active part in the scientific proceedings of the Royal Academy of Medicine in Ireland. At the presentation, which was made by Mr. Keatinge, chairman of the presentation committee, Sir John Lumsden said that Sir William's name was known not only in Ireland, but throughout the world, as that of a brilliant operator and an authoritative writer on surgery.

New Hospitals in County Mayo

The Mayo County Council has granted the application of the commissioners administering the affairs of the County Mayo Board of Health and Public Assistance for approval of their action in applying for a loan of £22,000 to provide hospital accommodation in the county. The loan is to be obtained from the Commissioners of Public Works for the purpose of supplementing a sum of £43,338 which is being granted by the Government for the provision and equipment of a county hospital at Castlebar, and district hospitals at Ballina and Claremorris, as well as for the reconstruction and improvement of the

existing hospital at Swinford. It will be repayable in half-yearly instalments over a period of twenty-five years at the rate of 5¾ per cent. per annum on the balance from time to time outstanding. In moving that the application be granted, the chairman said it would mean 2¼d. in the £ for the first three years, ¾d. for the five following years, and the sum would be decreasing year by year until it was all paid.

Amalgamation of Cork Hospitals

At a medical meeting of the South Cork Board of Health it was decided to invite the city manager, Mr. Monaghan, to discuss his proposals for the erection of a new fever hospital to serve Cork city and surrounding districts. The proposals include the closing of the North and South Fever Hospitals, and the trustees of the former, who have received a large sum of money from the sweepstakes fund, are prepared to hand over that sum for the erection of the new building. Dr. Condy, county medical officer of health, said the scheme originated about two years ago, when there was an unprecedented number of cases of infectious diseases, and accommodation in both hospitals was defective; the question then arose of unifying the system of proper treatment for such diseases.

Correspondence

BLOOD TRANSFUSION

SIR,—We have read with interest some of the correspondence on blood transfusion. We have used the Louis Jubé method, and no other, for the past four and a half years in about 300 cases, and it is a matter of surprise to us that it is not apparently more widely known, as after a little experience it is simple; clotting may occasionally occur if the donor's veins are very small, resulting in a slow delivery of blood. The apparatus permits the use of unmodified blood, and we have given transfusions of as much as 700 c.cm., but as the blood must be given fairly quickly this may constitute a disadvantage.

We do not consider it is ever necessary to use a local anaesthetic for the donor or the patient, except in rare cases where the patient's vein has to be exposed.

In view of the simplicity of this method we fail to see that there is any advantage from defibrination or citration as compared with the use of natural whole blood.—We are, etc.,

CHARLES S. D. DON.
C. E. JENKINS.

Salford Royal Hospital, Sept. 12th.

SIR,—Perhaps the answer to the problems of blood transfusion at present being discussed in the *Journal* is to be found in a consideration of the circumstances under which a particular transfusion is being carried out. It is a common experience that the apparently most standardized techniques for numerous procedures in medicine require modification from time to time. This is specially obvious when domiciliary treatment, with its pitfalls and difficulties, is necessary, as opposed to conditions prevailing in institutions where, as a rule, we have every facility. In such an operation as blood transfusion there are infinite variations in the circulations of the donors and of the recipients, both as regards their physical condition and the anatomical peculiarities of the veins, so that it is surely unwise to be too dogmatic. One should adjust methods to the circumstances of the occasion, a successful transfusion being the aim of the whole affair.—I am, etc.,

W. R. THROWER, M.B., M.R.C.P.

Weymouth, Sept. 11th.

SIR,—Whatever criticism may be levelled at Mr. Keynes's technique of blood transfusion it is to be hoped that one point which he has emphasized will not escape the notice of both those who perform the operation and those who frame the regulations of blood transfusion services. I refer to the injection of a local anaesthetic round the vein before the insertion of the needle. I have done this for sixteen years, and it is very seldom that the donor does not say at the end that he has never been so comfortable before. I have also acted as a donor myself on a good many occasions, and such experiences leave no doubt in one's mind as to which is the most comfortable method.

It is true that a sharp needle going straight into the vein is nearly painless, but needles are not always sharp, and sometimes travel some distance through the vein wall before entering the lumen. When the latter happens one's subjective sensations, although quite bearable, are not always pleasant; whenever the needle moves, moreover, pain is felt. All that is necessary to obviate any discomfort whatsoever is the subcutaneous injection through a fine hypodermic needle of a few drops of novocain, both in front of and around the vein. This is best done after the tourniquet has been applied.

It ought to be more widely known that an apparatus for whole-blood transfusion has recently been invented, and is put on the market by Messrs. F. M. Lautenschager of Munich. This consists of a cylinder with connexions arranged very much like the Kimpton tube which we used during the war, except that a needle is used to enter the vein. The cylinder is made of a material similar to artificial amber, known as "athrombit." When whole blood is run into a receptacle made of this material no clotting takes place for between ten minutes and a quarter of an hour. The "residents" of the German Hospital have used this for over one hundred blood transfusions with only two failures, both due to difficulty in entering the vein of the recipient. The use of this apparatus makes whole-blood transfusion very much quicker and easier than the citrate method, and is almost invariably successful in ordinary hands.—I am, etc.,

HENRY W. S. WRIGHT.

London, W.1, Sept. 12th.

END-RESULTS OF TONSIL AND ADENOID OPERATION IN CHILDHOOD

SIR,—Surely the primary essential in every case of tonsillectomy is the *complete* removal of the tonsils and adenoids. Is it not axiomatic that it is as impossible to have tonsillitis when the tonsils have been removed as it is to have appendicitis when the appendix has been removed?

To sum up the end-results of tonsillectomy when cases of partial removal of the tonsil are included must, to put it mildly, confuse the issue. The statistics quoted in the very interesting paper by Dr. J. Alison Glover and Dr. Joyce Wilson show that cases of tonsillitis have occurred among those classed as tonsillectomized patients, thereby proving that they had not been efficiently tonsillectomized. As it is impossible to know what proportion of the so-called tonsillectomized patients had been operated upon efficiently the value of the results stated must be somewhat problematical.

With further experience since my paper[1] in the *British Medical Journal*, ten years ago—experience of the end-results of *complete* removal of tonsils and adenoids in children—I am convinced that the conclusions then reached need no modification to-day. So long as the operation continues to be done inefficiently, and all children who have been operated upon are classed together

[1] *British Medical Journal*, 1922, i, 341.

as having been tonsillectomized, the same doubt and difficulties will arise. It is the inefficiency of the operation, and not the frequency, which calls for criticism.—I am, etc.,

London, W.2, Sept. 12th. HAROLD SINGTON.

SIR,—The most significant figures quoted by Drs. Glover and Wilson in their paper in the *Journal* of September 10th are those showing the incompleteness of the removal of the tonsils in from 41 per cent. to 73 per cent. of tonsillectomy operations. It is almost generally accepted that tonsil "remains" are more harmful than the tonsils which they succeed.

From my own observations I estimate that in more than 50 per cent. of operations upon the adenoids they are either incompletely removed or, worse still, the superior constrictor muscle of the pharynx is torn so that its subsequent scarring interferes effectively and permanently with the complete closure of the oropharynx from the nasopharynx. How easily the sphincter which effects this closure can be injured by a curette is apparent from Mr. Denis Browne's excellent description of the anatomy of this region in the *British Journal of Surgery* of July, 1932. The result of inability to shut off the nose from the mouth, as anyone who has observed the frequency of otitis in cleft palate will agree, is infection of the auditory tubes from the mouth, and consequent ear disease.

When more than half the cases Drs. Glover and Wilson analyse—for I see no distinction in their figures between those with tonsil and adenoid remains or pharyngeal scarring and those without—suffer from tonsil or adenoid remains or damage to the oro-nasal sphincter, surely any condemnation they make must fall upon the operation as performed, and not upon the operation as it should be. The balance of evidence against the operation as performed is so small that those of us who recognize the importance of the properly performed operation are strengthened in our conviction of its usefulness.—I am, etc.,

London, W.1, Sept. 12th. JAMES CROOKS.

BONE ABSCESS FOLLOWING UNDULANT FEVER

SIR,—The article by Drs. Gardner, Girdlestone, and Gillespie on bone abscesses due to *Brucella melitensis* which appeared in your issue of July 9th (p. 53) is of great interest.

In my thesis on undulant fever in South Africa, presented to the University of Glasgow in 1911, 268 cases of undulant fever due to *Br. melitensis* were recorded. Joint swellings or effusions occurred in 15.3 per cent. of the cases, cold abscesses in 1.86 per cent. Hip-joint disease, requiring treatment in bed with extension, occurred in one case, and there was one case of psoas abscess, probably due to caries of lumbar vertebrae, which continued to discharge for many months. Dr. A. Garrow, who at that time practised in Steytlerville, Cape Colony, also recorded, in 1910, a case of undulant fever followed by hip-joint disease, requiring prolonged rest in bed with extension. The abscesses were all post-febrile and cold. In my cases the contents of two of the abscesses were examined bacteriologically and were found to be sterile, a fact which the bacteriologist regarded as an indication of tuberculosis.

In the case of psoas abscess Calmette's conjunctival test was found to be strongly positive to bovine tuberculin instilled into the left eye, and weakly positive to human tuberculin in the right eye. The eyes of the patient's wife and myself, used as controls, gave no reactions. Besides drinking goat's milk, to which the *melitensis* infection was probably due, this man gave a history of drinking the milk of a cow which died of a wasting disease associated with a large abscess in its buttock. All of the abscess formations mentioned above were sequels rather than complications of undulant fever.

In my thesis I raised the question whether these abscesses, much rarer on the high veld of South Africa than on the Mediterranean littoral, were not due to tuberculosis supervening on undulant fever in subjects whose resistance had been broken down by the prolonged debilitating effects of the latter. Hence the finding by the above-mentioned gentlemen of *Br. melitensis* in pus from a similar abscess is a matter of great interest.—I am, etc.,

P. D. STRACHAN, M.A., M.D.

Maseru, Basutoland, South Africa, Aug. 15th.

INJECTIONS OF OXYGEN

SIR,—In reply to Dr. Arbour Stephens's letter published in the *Journal* of September 10th, I may point out that I did not and do not claim first-hand knowledge of the therapeutic value of injections of oxygen, as I rarely deal directly with patients. My problem was the physiological explanations of any beneficial results.

Dr. Stephens is in error when he says I did not mention any work of a therapeutic nature in this country. I mentioned Dr. Welsh's recent work, which was responsible for my letter. I regret I did not mention Dr. Stephens's name in connexion with the stomach.

Dr. Stephens is also in error when he claims priority for the statement that oxygen may benefit an abnormal stomach mucous membrane. He writes that he published such a statement in February, 1932. I published a similar statement over a year before that date—namely, in January, 1931, in *Physiol. Reviews*, vol. xi, p. 27. Although I may be, I do not claim to be the first to make such a statement; I certainly published it before February 17th, 1932.—I am, etc.,

Hampstead, N.W.3, Sept. 9th. J. ARGYLL CAMPBELL.

PERSISTENT PRIAPISM

SIR,—I am puzzled to know why those who discuss the "cause" of priapism (and of many other conditions as well) should apparently assume that "causation" is, in matters medical, always *either* "organic" or "psychological," and never what, for want of a better term, I will call psycho-physical. I suppose the real reason is that medical men are not taught, and never learn, anything about "causation" itself. But why should this be?—I am, etc.,

London, W.1, Sept. 12th. F. G. CROOKSHANK.

SIR,—I can recall two instances of this distressing condition, one of which may throw a ray of light upon its so far rather questionable aetiology.

The first case was that of a healthy man in the fifties, who lived well and was given to sexual excesses. He developed a priapism which lasted for twenty-three days, and which followed a banquet at which he drank more vintage port than he was normally accustomed to take. He paid the penalty in that he suffered from the most painful orchitis affecting his right testicle, and a usual painful arthritis of his left great toe and right knee. His priapism appeared before his joint and testicular complications, and subsided after them.

The second case was that of a young officer who was wounded in the great war, and who came under my care at Salonica. The wound was caused by a rifle bullet which had traversed the pelvis. There were no spinal symptoms, and no symptoms suggesting a wound of the bladder or bowel. He exhibited a very painful priapism, which lasted for ten days. The penis at this stage showed evidence of gangrene, and he died two days later. A post-mortem examination

showed no evidence of injury to the viscera. A piece of cloth had been carried into the pelvis by the missile, and an extensive cellulitis of the pelvic tissues with thrombosis of the veins had occurred. The spine was intact. The only cause of the priapism so far as we could find post mortem was thrombosis.

I think it is quite possible that a venous thrombosis explains the first case. As a surgeon I cannot bring myself to think that either psychologists or the most ardent followers of Freud can explain away such cases of continuous day and night priapism. The trouble is surely organic.—I am, etc.,

Bradford, Sept. 10th. BASIL HUGHES, D.S.O., F.R.C.S.

THE ADVANCE OF MEDICINE

SIR,—History tends to repeat itself in medical events as in secular affairs. Not for the first time has the word "surgery" proved an ill-distributed term, even when conditioned by qualifications such as "handicraft" or "art," or "science." Surgery is a teleological department of human knowledge, and all its sections are reciprocals: these finally interfuse in its objective *restitutio ad integrum*. Plato stressed the teleology when he said that the "medical art did not exist for the benefit of the medical art."

Negative prophecies as to the arrest of progress in any department of surgery are notorious pitfalls. Caesar Hawkins—surgeon to the King in Georgian times—is said to have been once seized with this lust of vaticination, stating that surgery had then reached its acme of development, and that further material progress could here scarcely be looked for. Within a decade, in another country, an almost unknown original worker was engaged on the rotatory problems of the tartaric acids, and later on a murrain among vines. Research work thus begun led in after-time to the most complete transformation in the method, scope, and results of surgery that the world has seen. Rumour has it that in more recent time other distinguished surgeons have been inclined to forecast in terms of sterility the further progress of the surgical art. Such forecasts have the infertility of a recurring decimal without the exactitude. An envisagement of surgical development within the next quarter of a century might well run on the lines of one of the subjects discussed in the Section of the History of Medicine at the Centenary assembly—to wit, the law of similars as a control.—I am, etc.,

London, W., Aug. 23rd. GEORGE BURFORD, M.B.

INJECTION TREATMENT OF INGUINAL HERNIA

SIR,—Dr. Howat has the advantage of me. I know no one who claims to do what he describes in his letter in to-day's *British Medical Journal*, but would have no hesitation in denouncing such a one as a fraud.—I am, etc.,

ST. GEORGE B. DELISLE GRAY,
Hove, Sussex, Sept. 10th. F.R.C.S.Ed.

BOVINE AND HUMAN TUBERCULOSIS IN JAPAN

SIR,—Possibly it is within your readers' recollection that correspondence under the heading "The tuberculosis problem" took place in the *Journal* early this year with regard to the incidence of human and bovine tuberculosis in Japan. Dr. Camac Wilkinson wrote on January 30th:

"It is a pity that views resting on a flimsy basis should be advocated by men who have not the special experience to guide them to the truth. It is a known fact that . . . there was little or no tuberculosis in cattle of Japanese breed. These cattle were *naturally immune*. . . . Surely we ought not to hear anything more of the conversion of tubercle bacilli of the bovine strain into tubercle bacilli of the human strain in the human body."

Later I pointed out that the condition which Dr. Wilkinson had stated was a fact, and on which his argument was based, could not be correct, and that, on the contrary, bovine tuberculosis was prevalent in Japan. I have now received from Japan, through the good offices of Dr. P. Ohshima, Director of the Sanitary Bureau, Tokio, the following information and tables, which will probably be of some interest. First, an excerpt from the report of Dr. Seisuke Matsuzawa of the Hokkaido Imperial University Faculty of Medicine, Tokio. He writes:

"I made a study of 104 tuberculous in-patients of all ages of this department as to the infection by bovine tubercle bacilli. The diagnosis was either morphologically, by cultivation, or by animal experiment, and as a result I found four cases of bovine bacillus infection—3.8 per cent."

Unfortunately Dr. Matsuzawa does not state what percentage of the 104 patients were children, but he gives the following table of some of his test results:

Ages:	0-5		6-10		11-16		Adult		Total		Ratio of Bovine Tuber.
Parts Affected	H.	B.	H.	B.	H.	B.	H.	B.	H.	B.	
Lymphatic gland ...	—	—	1	1	1	0	9	1	11	2	15.5
Bones and joints ...	3	0	1	0	5	1	30	1	39	2	4.8
Genito-urinary organs	—	—	—	—	1	0	17	0	18	0	0
Other surgical tuberculosis	1	—	—	—	—	—	4	0	5	0	0
Pulmonary tuberculosis	—	—	—	—	3	0	24	0	27	0	0

H = human tuberculosis; B = bovine tuberculosis.

It should be noted that there were no cases of bovine tuberculosis in children up to 5 years old. The probable explanation is that most Japanese babies are breast-fed.

The following figures are the results of post-mortem inspection over three years of *milch* cows slaughtered (presumably for food) in Japan: Cows with mild tuberculosis, 1925, 87.91 per cent.; 1926, 88.78 per cent.; 1927, 89.75 per cent. I was furnished with further figures, but I think those already mentioned are sufficient to explode any so-called fact "that there is little or no tuberculosis in cattle of Japanese breed." At the same time, I do not suggest that these findings by themselves prove or disprove the mutation of the bovine and human strains of the tubercle bacillus.—I am, etc.,

WILLIAM S. STEVENS, M.R.C.V.S.
London, S.W.1, Sept. 6th.

SACRO-ILIAC SUBLUXATION

SIR,—I have read with much interest Dr. James Fleming's letter in your issue of August 27th on sacro-iliac subluxations. I cannot, however, agree with some of the statements made. Concerning the anatomical position and the method of protection of the joint, which Dr. Fleming considers are of such a nature that definite subluxations are thereby rendered occurrences of great rarity, I can but state that anatomically the joint in question has all the structures of a movable joint, that it is well known that the joint becomes relaxed during pregnancy, and that compensatory movement in it can occur in such cases as ankylosis of the hip-joint, etc.

When one has acquired the art of diagnosing the above-mentioned displacements and then learnt how to reduce them—matters which I take the opportunity of stating are not as yet taught in the medical curriculum—one cannot agree with what Dr. Fleming calls "the ethereal diagnostic flights of sacro-iliac subluxation."

I have now had about 2,000 cases of sacro-iliac subluxation under my care, which I think justifies me in making the above remarks.—I am, etc.,

London, W.1, Aug. 29th. EDGAR CYRIAX.

LONDON CLINIC AND NURSING HOME

SIR,—Representing the Medical Group by whose initiative the London Clinic and Nursing Home came into existence, we feel that it is our duty to make some statement regarding its present situation. The public announcement of the appointment of a receiver and manager of the affairs of the company must suggest to our profession and to the public generally that the undertaking has come to a premature end. Were this the case it would indeed be a national disaster, for the home sets a new standard in the medical and surgical treatment of private patients.

It is true that the company has underestimated the amount of capital required for the building, its equipment, and its working, and that arrangements for additional capital will have to be made. The appointment of the receiver and manager is, however, not a destructive measure, but a protective measure designed to enable the work of the home to be carried on until arrangements for the additional capital can be made.

The Medical Group is affording the receiver all the advice and assistance which its members can give towards achieving efficient and economical working. They have no doubt of the ultimate success of the undertaking, and they are satisfied that during the period of financial reorganization the reception of patients and the working of the home will be carried on to the complete satisfaction of everyone concerned.—We are, etc.,

H. MORELAND MCCREA.
G. LENTHAL CHEATLE.
WALTER HOWARTH.
H. S. SOUTTAR.
} On behalf of the Harley Street Group.

London, W.1, Sept. 12th.

THE STUDENT-APPRENTICE

SIR,—It is very curious that in these days, when so much is written upon psychology, subconscious thought, mental atmosphere, etc., two years are allowed to elapse in medical education before the student is brought into practical contract with his life-work.

Argument as to laying a sound scientific basis to begin with is plausible, but to me, at least, it does not carry conviction, and were I to begin again my medical studies I should ask to be brought into immediate touch with patients and their diseases, so as to obtain from the very first those impressions the wide experience of which is quite different from book knowledge.

Scientific physiology and practical anatomy are both essentials. On that point all will agree. But if the mind of the learner is stimulated by what he sees, stimulated to inquire as to the explanation, surely he will progress much faster to the final goal than if he reads and studies the scientific side only without seeing immediately whereunto these studies are leading him. Of course the combination of practice and theory is sounder than either extreme. But my argument is that subconscious thought, the accumulation of practical impressions, should be esteemed of higher value than the theoretical side.

Hence, as matters stand at present, I often advise young students who are beginners to make friends with some kindly house-surgeon, and with physicians and senior students, and to try and get into the wards for even half an hour daily. Then, having noted the names of the accidents or diseases they have seen, to dip for half an hour more into standard works that explain what they have just seen.

To summarize my contention, clinical experience, with its subconscious impressions, is of higher value than anything else, and the leading idea should be to sow innumerable seeds in the fallow field, some bearing fruit at once, others germinating after many days—perhaps years. While formulating these views I feel that most people would say the leaders of the profession must know best how to construct a course of study. Nevertheless I imagine these lines will find an echo in many minds.

The medical student should be clinically trained from the very outset, and the scientific training poured in by degrees as explanatory. It is all just like playing cricket. You may read books without end, and yet neither field nor bat nor bowl like the boy who begins by hitting the ball or bowling it, and later adds in the theory. There is much to be said for the old system of apprenticeship, whatever the profession, trade, or game may be.—I am, etc.,

Junior United Service Club, Sept. 1st. T. M. CORKER, Major-General.

VACCINATION IN THE 'SIXTIES

SIR,—In the library of the Royal Society of Medicine there are several volumes of the reports of the medical officer of the Privy Council which were at one time in the possession of Sir John Simon, who was that medical officer. His book-plate is pasted inside the cover of some of them. In the volume (which has the plate) containing the second report (1859) the following holograph letter is pasted on the first leaf after the cover. Sir John evidently thought that it was worth preserving as a curiosity.

Sep. 2, 1863.

My dear Sir,

A medical man from Battersea applied yesterday at the station for lymph. On seeing me dip my lancet in water he asked if it was to keep it *cool*. "No," I replied, "to keep it clean," because, he said, during the late panic he had so many to vaccinate, and did them so fast, his lancet became quite *hot*. What do you think of this? Isn't it a match for an American statement?

Yours very truly,

J. Newton Tomkins Esq. (signed) J. F. Marson.

On the top left-hand corner of the letter there is written with a red pencil in another hand, "Mr. Lowe."

In 1863 Mr. Marson, who was the well-known authority on small-pox and vaccination, was the resident surgeon at the Small-pox and Vaccination Hospital, Upper Holloway. Mr. Tomkins was at that date an inspector of the National Vaccine Establishment, and lived at Russell Place, Fitzroy Square. I cannot find in the *Medical Directory* for 1863 the name of any practitioner Lowe who lived in or near Battersea, or held any official post in connexion with vaccination.—I am, etc.,

West Hampstead, Aug. 24th. E. W. GOODALL.

"POLIOMYELITIS: PAST AND FUTURE"

SIR,—The leading article on the above subject in the *Journal* of September 10th interests me considerably. I think, however, that it does not give a complete review of the subject, and is certainly apt to give the impression that there is no research work being done on poliomyelitis in this country. In my opinion the work of Fairbrother, Hurst, and Morgan[1 2] adds the finishing touch to the inquiries of Flexner, Amoss, Lewis, Landsteiner, Levaditi, Macnamara, and Robertson, reference to these latter workers being made in the editorial article.

The tendency so prevalent in art and science to note and applaud the work done abroad to the neglect of good effort made at home is much to be deprecated. The

statement that such supplies of poliomyelitic immune serum as exist are in the hands of private individuals, a few hospitals, and research institutions is broadly correct; but to say that such serum is not available to the profession at large is misleading, because any practitioner can obtain liberal amounts from the Lister Institute at any time.

Dr. Edward Weston Hurst has published much recent work on poliomyelitis,[3] and is now in America working on the same subject at the Rockefeller Institute.—I am, etc.,

FREDERICK H. HEALEY, M.B.,
B.Sc., D.P.M.,
Deputy Medical Superintendent,
Borough Mental Hospital.
Derby, Sept. 10th.

*** The article in question makes no pretence to give a complete review of the subject of poliomyelitis and the literature concerning it, and the fact that reference was particularly made to the work bearing on immunity and treatment does not detract from the great value of the work of Drs. Fairbrother and Hurst on the histopathology of the disease and the mode of spread of the virus in the nervous system. As regards the second point, the general practitioner has no means of knowing that serum is available at the Lister Institute. Moreover, it is not to be obtained from the sources upon which he relies for other immune serums. Finally, the Lister Institute informs us that at the present time the serum it possesses is very limited in quantity and nearly exhausted. Nor is there any immediate prospect of the Institute supplying it in regular or "liberal" amounts.

REFERENCES
[1] *British Medical Journal*, 1930, i, 1187.
[2] Ibid., 1930, i, 1129.
[3] *Journ. Path. and Bact.*, 1929, xxxii; 1930, xxxiii.

Medico-Legal

DEATHS FROM ALCOHOLISM

DUTIES OF DOCTOR AND CORONER

The following inquiry comes to us from a medical man who has practised for many years in rural England:

"Can anybody explain to me the exact position regarding the certification of death from chronic alcoholism? Alcohol brings about so many diseases which result in death that I am wondering whether all these cases should be referred to the coroner. I have certified many deaths in my time due directly or indirectly to alcohol, and no question has ever arisen as to the propriety of such action by any registrar, so that it has become my common practice. One, perhaps wrongly, does not consider alcohol in the same light as, say, cocaine, opium, etc.; but should it not be so?"

We are indebted to Mr. S. Ingleby Oddie, coroner for Central London, for the following answer to our correspondent's question:

Section 3 (1) of the Coroners Act, 1887, provides that where a coroner is informed that the dead body of a person is lying in his jurisdiction, and there is reasonable ground to suspect that such person died an unnatural death, the coroner shall hold an inquest. A death due directly or indirectly to alcoholism is an unnatural death, and requires an inquest for the following reason. A death due to chronic alcoholism is a death due to the long-continued consumption of something which, when taken in excessive amounts, is a poison, and it therefore is not a natural death, but an unnatural one within the meaning of the Section; and as the Section is mandatory and not permissive the coroner has no discretion and must hold an inquest in such a case if he desires to carry out his duties strictly in accordance with the law from which he derives them.

What is the duty of a doctor who has recently attended a patient who has died from the consequences of, say, cirrhosis of the liver due to alcoholism? Section 20 (2) of the Births and Deaths Registration Act, 1874, provides that he should issue a death certificate to the best of his knowledge and belief, and Section 6 (2) of the Births and Deaths Registration Act, 1926, requires him to send that certificate to the registrar, instead of to the relative (as was the former practice), and he is required also to inform the relative that he has issued a certificate of death. Further, it is the common law duty of the doctor, as one of those about the deceased, to inform the coroner, or his officer, or the police, that an inquest may be required, but this does not relieve him from the necessity of issuing his death certificate.

Thus the duty of a medical practitioner in cases of deaths from alcoholism is perfectly plain: (1) He must certify the death. (2) He must notify the coroner. If the doctor omits to notify the coroner, as is frequently the case in these deaths, he will merely cause delay, for it is the duty of the registrar, upon receipt of a medical certificate of death from alcohol, to notify the coroner, by virtue of Rule 75 of the Statutory Rules and Orders made by the Minister of Health in 1927 under the Births and Deaths Registration Act, 1926, which requires the registrar to so notify the coroner in all cases of deaths from unnatural causes.

The following quotation from a circular letter issued by the Home Office to coroners in June, 1927, upon this question, appears to put the matter beyond doubt:

"The Secretary of State has had his attention drawn from time to time to cases in which it appeared that some coroners and some practitioners are under the impression that if a death may possibly be the subject of an inquest the practitioner should not give a certificate of cause of death; but it does not appear that the practitioner in such circumstances is in any way relieved from his duty to give the medical certificate if he regards himself as competent to do so. He is, of course, required to certify the cause of death to the best of his knowledge and belief; and if he is in such doubt as to the cause of death that he is unable to certify any cause to the best of his knowledge and belief, he should not give a certificate. But, apart from this exceptional case, his duty is unqualified, and he should not refrain from giving a certificate because he has reported the death to the coroner, or believes that the case will be reported to the coroner, or that an inquest will take place. If the practitioner has any reason to believe that an inquest may be necessary, it is, of course, his common law duty, as one of those about the deceased, to inform the coroner, or his officer, or the police, but this does not of itself relieve him of his other duty of certifying the cause of death."

Obituary

We have to announce the death, on September 7th, in his seventy-ninth year, of Dr. DONALD MACLEOD, one of the oldest medical men practising in Glasgow. A native of Skye, Dr. Macleod possessed to the end of his life all the islander's love for the land of his birth, and had great sympathy with every scheme for promoting the interests of the West Highlander. He graduated at Glasgow University in 1879, and returned to the city after twelve years spent in an industrial town in Lancashire. He was held in affectionate regard by his patients, and was an excellent illustration of the old-time family practitioner.

The following well-known foreign medical men have recently died: Dr. RUDOLF KRAUS, director of the bacteriological institute and of public health in Chili, aged 62; Dr. ALBERT BROCHIN, honorary surgeon of the Hôpital Péan, and formerly president of the Association of Medical Journalists, aged 88; and Dr. ALBERT EUGENE BULSON, professor of ophthalmology in the Indiana University School of Medicine, and vice-speaker of the House of Delegates of the American Medical Association.

Medical News

The annual prize distribution at St. George's Hospital Medical School will be held in the board room of the hospital at 3 p.m. on Saturday, October 1st, when Dr. E. Kaye Le Fleming will give an address on "The general practitioner, his relationship to the State, the public, and his profession." The annual dinner will be held on the same evening at the Hyde Park Hotel, at 7.15 for 7.45 o'clock, when the chair will be taken by Sir Crisp English.

The ninety-eighth winter session of the Middlesex Hospital Medical School will open on Tuesday, October 4th, with a ceremony in the Queen's Hall, Langham Place, at 3 o'clock. The inaugural address, entitled "Mind and body," will be given by Dr. Douglas McAlpine, and the prizes gained during the previous year will be distributed by Major the Hon. J. J. Astor, M.P., vice-president of the hospital. The wards of the west wing, the nurses' home, the medical school, and research departments will be open for inspection. The annual dinner will be held on the same day at 7.30 p.m. at the Savoy Hotel.

The annual dinner of past and present students of the Westminster Hospital will be held on the evening of Saturday, October 1st, at Grosvenor House, Park Lane, W.

The winter session of the West London Hospital Post-Graduate College commences on Thursday, October 13th, when the opening address will be given, at 3.30 p.m., by Sir William Hale-White, on bacilluria.

The prize distribution and conversazione of the Royal Dental Hospital of London School of Dental Surgery will take place at the hospital on October 3rd, at 8 p.m. The Right Hon. Lord Riddell will preside.

The British Red Cross Society will hold a course of seven lectures and demonstrations (open to non-members) on tropical hygiene on Mondays, Wednesdays, and Fridays, commencing on Monday, September 26th, at 9, Chesham Street, Belgrave Square, S.W.1, at 5.30 p.m. The course will cover such questions as food, clothing, and medical and sanitary precautions necessary for the preservation of health in hot countries. The examination for the Society's certificate in tropical hygiene will be held on October 14th. Fees for the course are 5s. for members of the Red Cross Society, and 7s. 6d. for non-members.

A paper entitled "The medical life of Nelson" will be read by Mr. James Kemble, F.R.C.S., at the East London Children's Hospital, Shadwell, on Wednesday, September 28th, at 8.45 p.m. The chair will be taken by Surgeon Vice-Admiral R. S. Bond, C.B., Medical Director-General of the Navy, and some Nelsoniana will be on view.

The Fellowship of Medicine has arranged a whole day course in general medicine and surgery at the Westminster Hospital, from September 19th to October 1st; this course is open only to men graduates. Two more courses in general medicine and surgery will be given as follows: Metropolitan Hospital, October 3rd to 15th, and the Miller General Hospital, October 17th to 29th. Other courses in October include: dermatology, at St. John's Hospital, afternoons only, October 3rd to 29th; oto-rhino-laryngology, at the Central London Throat, Nose, and Ear Hospital, all day, October 3rd to 29th; proctology, at the Gordon Hospital, every afternoon, October 3rd to 8th. Week-end courses will be given as follows: chest diseases, at the Brompton Hospital, October 8th and 9th; clinical surgery, at the Royal Albert Dock Hospital, October 15th and 16th; obstetrics, at the City of London Maternity Hospital, October 29th and 30th; rheumatic and allied diseases, at Bath, Somerset, October 1st and 2nd. An evening course on physical medicine will take place at the London Light Clinic, October 3rd to 26th, and on rheumatism, at the British Red Cross Clinic, November 8th to 25th. All courses are open only to members of the Fellowship of Medicine, 1, Wimpole Street, W.1.

The Chesterfield lectures, constituting a systematic course in dermatology, will be given at the London School of Dermatology, St. John's Hospital for Diseases of the Skin, Leicester Square, W.C., on Tuesdays and Thursdays, from October to March. Full particulars can be obtained on application to the Dean.

A sessional meeting of the Royal Sanitary Institute will be held in the Guildhall, Portsmouth, on Friday and Saturday, September 30th and October 1st. On Friday, at 4.45 p.m., after the visiting members have been received by the Lord Mayor, discussions will take place on municipal engineering works in Portsmouth, to be opened by Mr. Joseph Parkin, and on the public health service—a retrospect and a forecast, to be opened by Dr. A. B. Williamson. On Saturday morning visits will be made to H.M. Dockyard and to Haslar Hospital, and in the afternoon to municipal works and undertakings in the city.

A five weeks' introductory course of lectures on psychotherapeutic theory and method will be delivered on Monday and Thursday afternoons from October 3rd to November 3rd at the Institute of Medical Psychology (formerly the Tavistock Square Clinic for Functional Nervous Disorders). The fee for the course is two guineas. A main course, covering work for a year, starts on October 3rd, and is divided into two groups, each containing six practitioners; the first group is for those who can only devote three hours twice a week, and the second for those who will give as a minimum twelve hours a week (three days). The fee for the first group is £35, and for the second £60. Further information may be obtained from the lecture secretary at the institute, 51, Tavistock Square, W.C.1.

The International Association for Preventive Paediatrics will hold its second conference at Geneva (Salle de l'Alabama, Hôtel de Ville) on September 28th and 29th. The subjects to be discussed are: (1) "The prophylaxis of syphilis in children born of proven syphilitic parents" (Professor Lesné, Paris, and Dr. Nabarro, London); and (2) "The prophylaxis of neurosis in children" (Dr. Heuyer, Paris, and Professor Hamburger, Vienna). The association numbers more than 200 members, and represents thirty different countries. Inquiries should be addressed to the Secretariat, 31, Quai du Mont-Blanc, Geneva.

The twenty-second French Congress of Medicine will be held in Paris under the presidency of Professor F. Bezançon from October 10th to 12th, when the following subjects will be discussed: malignant lymphogranulomatosis, acrocyanosis, and the medico-chirurgical treatment of pulmonary abscess. Further information can be obtained from the General Secretary, Dr. Abrami, 9, Rue de Lille, Paris.

One of the sessions of the Public Health Congress in London next November will be devoted to a discussion on the report of the *Lancet* Commission on Nursing. The discussion will be organized by the British Hospitals Association, and will take place at the Royal Agricultural Hall, Islington, on Friday, November 18th, at 2.30 p.m., with the Hon. Sir Arthur Stanley, president of the association, in the chair. It will be opened by Sir Squire Sprigge, Editor of the *Lancet*.

Messrs. H. K. Lewis and Co., Ltd., announce for early publication: *A Short Practice of Surgery*, by Hamilton Bailey and R. J. McNeill Love, Volume II; *Common Skin Diseases*, by A. C. Roxburgh; *The Principles and Practice of Otology*, by F. W. Watkyn-Thomas and A. Lowndes Yates; *The Breast-Fed Baby in General Practice*, by Leslie G. Housden; and *National Health Insurance*, by G. F. McCleary.

The Swiss Forel prize for 1931 has been awarded to Dr. Scholder of Lausanne for his work on congenital dislocation of the hip.

The following professors have recently been appointed in the French medical faculties: Dr. Creyx, professor of therapeutic hydrology and climatotherapy at Bordeaux; Dr. Heckenroth, professor of tropical medicine at Marseilles; and Dr. Chavigny, professor of legal medicine and social medicine at Strasbourg.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

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Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are MUSEUM 9861, 9862, 9863, and 9864 (internal exchange, four lines).

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The address of the Irish Office of the British Medical Association is 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 24361 Edinburgh).

QUERIES AND ANSWERS

John Hilton

Lieut.-Colonel L. A. HODGKINSON LACK, I.M.S., Principal of the Medical College, Rangoon, writes: Can any one of your readers let me know where, how, and at what cost it would be possible to get a portrait of John Hilton which could be hung up in the dissecting room of the college?

Ultra-violet Rays in Atmosphere

Dr. R. H. NORMAN (Seaton, Devon) writes: I shall be grateful if any reader of the *Journal* will inform me of the method, or methods, used for actually estimating the amount of ultra-violet light in the atmosphere.

Softening the Beard

"W. B. D." writes: As shaving is becoming more difficult and painful, despite the trial of various razors, I would appreciate any hints which would tend to soften the beard or harden the skin. Even a shave by a barber is not without marked discomfort at times.

Income Tax

Replacement of Car

"M. F." had a car which cost £164, and on June 30th, 1932, sold it for £60 and bought another car for £240. He makes his accounts up annually to January 30th. What claims should he make?

*** The simplest way of dealing with the matter—as depreciation has not been claimed in the past—is to claim cost of replacement. The amount to be claimed will be £164 − £60 = £104, and it will have to be regarded as an expense of the year ending January 30th, 1933, and so will not affect his present income tax liability. When making his return for 1934–5 he should claim the "depreciation" allowance: it cannot be claimed for 1933–4, as that year will be affected by the "replacement" claim, and the one excludes the other.

LETTERS, NOTES, ETC.

Ross Award Fund

Sir JAMES BARR (Chairman of Committee, Ross Award Fund) writes: I beg to inform you that the total sum raised for Sir Ronald Ross amounted to £15,513 5s. 6d. Thanks to this fund, Sir Ronald Ross's anxiety for the late Lady Ross was removed, and his declining years are being made happier. The fund is now closed.

Physical Medicine

Dr. MATHER THOMSON (London, S.W.7) writes: In your issue of September 10th Dr. C. B. Heald has a scathing reference to the work of Abrams, and refers particularly to a diagnostic test which failed. In May, 1922, I demonstrated the "reactions of Abrams" to Dr. Heald and two of his friends under exacting conditions. Dr. Heald reported that it was an extraordinary demonstration, and that the results called for a proper investigation, and advised that a specially selected delegation should visit Abrams's clinic in San Francisco. Further, Dr. Heald, I believe, was one of the signatories to the "Horder Report," which contained the following statement: "The fundamental proposition originally announced by Dr. Albert Abrams must be regarded as established to a very high degree of probability." Comment is not necessary. With regard to Abrams's oscilloclast, proof of its value in the treatment of chronic disease can easily be obtained.

Drs. OSCAR PARKES and ERIC PERKINS (London, W.) write: Dr. C. B. Heald accuses the authors of *The Detection of Disease* of omitting or misrepresenting an important fact relating to himself with regard to the electronic reactions of Abrams. He does not deny that the existence of these reactions was definitely established by the Horder Committee, of which he was a member. Nor does he deny his own statement (on page 37 of the report), to the effect that he, like Sir Thomas Horder, acted as subject, and definitely *felt* the reactions. But he does complain that the authors of *The Detection of Disease* omitted to specify the apparatus which was used on this occasion. Will he therefore turn to page 31, where he will find words which should be sufficiently obvious to anyone who understands plain English: "This [the emanometer of Boyd] was the tuning device used during the sessions of the Horder committee." . . . The authors weighed every word they wrote, and they believe that every word is strictly in accordance with the truth. Their plea was, and is, a very modest one, their sole desire being to arouse interest, so that further investigations shall be made, not necessarily by doctors, but in the first place by expert physicists, without medical bickering, and that better brains than their own shall bring the methods of Abrams to even greater perfection and the personal equation be eliminated. Since Dr. Heald and his colleagues declared in their report that their work must be elaborated and continued—"so that the nature, the significance, and the practical application of the facts they [*sic*] had brought to light might be fully studied"—why do they remain, after eight years, inactive, and even hostile?

A Warning

The Chief Constable of South Shields asks that attention be drawn to a man who falsely represents himself as "Dr. John Alexander Tolmie," on holiday from Canada. This man is identical with Andrew John Gibson, who has a number of convictions for obtaining money by fraud, etc., in New South Wales, San Quentin (California), San Francisco, Durban and Johannesburg (South Africa), Hants Assizes (from Bournemouth). In South Shields he got into conversation with a local practitioner, and was introduced by the latter to his bank manager, to whom he presented a bogus deposit certificate demand note for ten thousand dollars, drawn on the Provincial Treasurer's Office, Edmonton, Canada, and was given possession of a cheque book containing thirty cheques, Nos. H/2 A. 17731 to H/2 A. 17760. He cashed a number of cheques, and is now wanted on warrant. He also entered into an agreement for partnership with the local doctor. "Dr. Tolmie" is described as: Aged 52 years, height 5 ft. 7½ in., complexion fresh, hair grey, eyes grey, small cyst on right side of face, indistinct dot on right forearm. It is desired that should he visit any practitioner information be immediately given to the local police.

The current *Medical Register* shows two practitioners of the name John Alexander Tolmie. Steps have been taken to inform one of them, who lives at Taber, Alt., Canada, of the circumstances related above. Dr. J. A. Tolmie of Hull writes to say that he has never heard of the impostor, nor has he any knowledge whatever of him.

Correction

Dr. C. A. MORTLOCK-BROWN (Braunton) wishes to correct the report of her contribution to the discussion in the Public Health Section on paratyphoid and the water supply (August 20th, p. 372). "Chloride and ammonia" should read "chlorine, ammonia, and sulphites."

We are asked by Messrs. Derby and Co., Ltd., gold, silver, and platinum refiners, 27, Finsbury Square, E.C.2, to say that they are prepared to hire radium to medical practitioners at short notice and on reasonable terms.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 47, 48, 49, and 53 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 51 and 52.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *180*.

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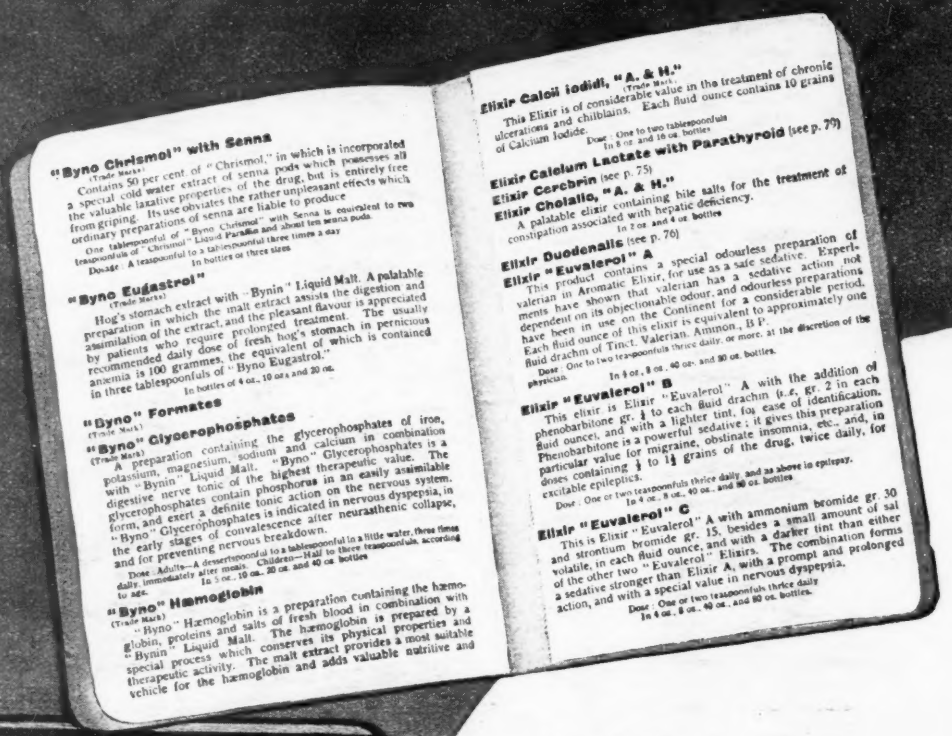
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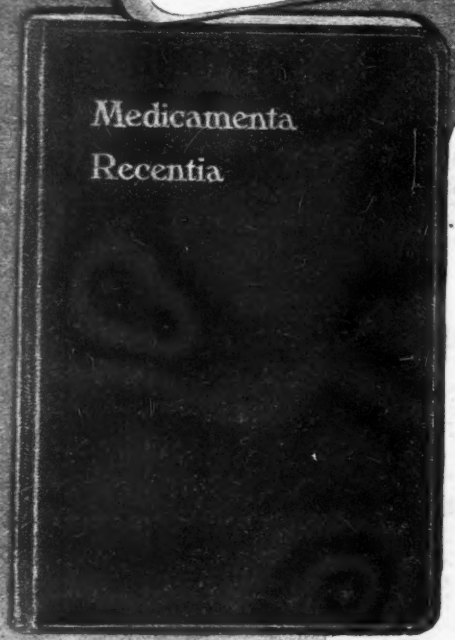
Contains 50 per cent of "Chrismol," in which is incorporated a special cold water extract of senna pods which possesses all the valuable laxative properties of the drug, but is entirely free from griping. Its use obviates the rather unpleasant effects which ordinary preparations of senna are liable to produce.
One tablespoonful of "Byno Chrismol" with Senna is equivalent to two teaspoonfuls of "Chrismol" Liquid Paraffin and about ten senna pods.
Dosage: A teaspoonful to a tablespoonful three times a day
In bottles or three sizes
"Byno Eugastrol"
(Trade Marks)
Hog's stomach extract with "Bynin" Liquid Malt. A palatable preparation in which the malt extract assists the digestion and assimilation of the extract, and the pleasant flavour is appreciated by patients who require prolonged treatment. The usually recommended daily dose of fresh hog's stomach in pernicious anæmia is 100 grammes, the equivalent of which is contained in three tablespoonfuls of "Byno Eugastrol."
In bottles of 4 oz., 10 oz. and 20 oz.
"Byno" Formates
(Trade Mark)
"Byno" Glycerophosphates
(Trade Mark)
A preparation containing the glycerophosphates of iron, potassium, magnesium, sodium and calcium in combination with "Bynin" Liquid Malt. "Byno" Glycerophosphates is a digestive nerve tonic of the highest therapeutic value. The glycerophosphates contain phosphorus in an easily assimilable form, and exert a definite tonic action on the nervous system. "Byno" Glycerophosphates is indicated in nervous dyspepsia, in the early stages of convalescence after neurasthenic collapse, and for preventing nervous breakdown.
Dose: Adults—A dessertspoonful to a tablespoonful in a little water, three times daily, immediately after meals. Children—Half to three teaspoonfuls, according to age.
In 5 oz., 10 oz., 20 oz. and 40 oz. bottles
"Byno" Hæmoglobin
(Trade Mark)
"Byno" Hæmoglobin is a preparation containing the hæmoglobin, proteins and salts of fresh blood in combination with "Bynin" Liquid Malt. The hæmoglobin is prepared by a special process which conserves its physical properties and therapeutic activity. The malt extract provides a most suitable vehicle for the hæmoglobin and adds valuable nutritive and
Elixir Calcii Iodidi, "A. & H."
(Trade Mark)
This Elixir is of considerable value in the treatment of chronic ulcerations and chilblains. Each fluid ounce contains 10 grains of Calcium Iodide.
Dose: One to two tablespoonfuls
In 8 oz. and 16 oz. bottles
Elixir Calcium Lactate with Parathyroid (see p. 79)
Elixir Cerebrin (see p. 75)
Elixir Cholalic, "A. & H."
A palatable elixir containing bile salts for the treatment of constipation associated with hepatic deficiency.
In 2 oz. and 4 oz. bottles
Elixir Duodenalis (see p. 76)
Elixir "Euvalerol" A
This product contains a special odourless preparation of valerian in Aromatic Elixir, for use as a safe sedative. Experiments have shown that valerian has a sedative action not dependent on its objectionable odour, and odourless preparations have been in use on the Continent for a considerable period. Each fluid ounce of this elixir is equivalent to approximately one fluid drachm of Tinct. Valerian. Ammon., B.P.
Dose: One to two teaspoonfuls thrice daily, or more, at the discretion of the physician.
In 4 oz., 8 oz., 40 oz. and 80 oz. bottles.
Elixir "Euvalerol" B
This elixir is Elixir "Euvalerol" A with the addition of phenobarbitone gr. ½ to each fluid drachm (i.e. gr. 2 in each fluid ounce), and with a lighter tint, for ease of identification. Phenobarbitone is a powerful sedative; it gives this preparation particular value for migraine, obstinate insomnia, etc., and, in doses containing ½ to 1½ grains of the drug, twice daily, for excitable epileptics.
Dose: One or two teaspoonfuls thrice daily, and as above in epilepsy.
In 4 oz., 8 oz., 40 oz., and 80 oz. bottles
Elixir "Euvalerol" C
This is Elixir "Euvalerol" A with ammonium bromide gr. 30 and strontium bromide gr. 15, besides a small amount of sal volatile, in each fluid ounce, and with a darker tint than either of the other two "Euvalerol" Elixirs. The combination forms a sedative stronger than Elixir A, with a prompt and prolonged action, and with a special value in nervous dyspepsia.
Dose: One or two teaspoonfuls thrice daily
In 4 oz., 8 oz., 40 oz., and 80 oz. bottles.



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